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SOME FALLACIES IN THE OPEN-AIR TREATMENT OF PULMONARY TUBERCULOSIS.

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Open-air, or outdoor, treatment means rest and exercise in the open. No particular climate nor altitude is required. The question is not where, but how shall the patient live?

To Brehmer credit must be given for demonstrating the great practical value of intelligent open-air treatment of pulmonary tuberculosis. In 1859 he first directed attention to this method and emphasized the importance of strict attention to details in the regulation of the patient's diet, hours of rest, exercise and general habits. In passing it might be well to remark that for the first fifteen years his teachings were not regarded seriously. Since then, however, each year has seen a gradual increase in the recognition of the great possibilities of this method until it is now practiced in all civilized lands.

That the open-air treatment, if intelligently and carefully adjusted to individual requirements, either at a sanatorium or at home, in any climate, is of estimable benefit, no physician of any considerable experience in handling these cases will deny, but careful and systematic regulation of hours of exposure, rest, exercise and diet is necessary.

It is equally true that lack of attention to details, and the indiscriminate exposure of all patients, in all stages of the disease, at all hours, in all seasons, regardless of temperature or humidity conditions, is not only unscientific and empirical, but may result in extension of existing lesions, aggravation of distressing symptoms, unintentional brutality, and in some instances in the patient's early and untimely end.

Possibly in cases not too far advanced the ideal procedure might be, if the patient could afford it, to prescribe the climate particularly adapted to each individual; one patient might be best treated at a high altitude, another at a low level, another by residing in the desert and still another at the seashore. The climate suitable for one might be unsuitable for each of the others.

However, there is no specific climate, and tuberculosis is a disease not confined to the wealthy classes and even if one climate were better than another we are compelled by economic reasons, if for no other, to treat the majority of our patients where we find them with the best means at hand. If no one climate has a specific curative action it only goes to establish the fact that a patient may be cured in any climate. Atmospheric conditions in the region surrounding Chicago average as well perhaps as elsewhere. This is true at least during a greater part of the year, and although some months may not be so favorable it is only necessary to exercise care and judgment to obtain good results. Wherever one resides, some season of the year, varying in time, is more or less disagreeable in some respects.

While atmospheric, topographic, psychic, sociologic and economic conditions are all inseparably associated with the treatment of this disease they are not here directly under consideration, but rather the fallacies and abuses incident to open-air treatment.

Apart from the psychic effect of sunshine and good weather, there is much reason to believe that daylight and sunlight exercise a healing influence on all tuberculous lesions. Bandelier and Roepke state that daylight and sunlight stimulate the cellular tissues, strengthen the organic functions, facilitate the excretion of carbonic acid, stimulate the blood changes, and restore the impaired action of the skin.

Again, the same authors tell us, "More neces-

sary and important is the permanent air bath, in the sense that permeable clothing and coverings should allow both by day and night a constant interchange between the air surrounding the body and the outer air. Without chilling the body this will facilitate the action of the skin and diminish the perspiration."

However, merely to say to a patient, "Remain in the sunshine as much as possible," is not enough, nor is it good advice. It should be explained that too long, or too much exposure to sunshine in hot weather may result seriously; that it is better to remain in the shade or under shelter except when taking sun-baths. If the latter are taken they should not exceed a half-hour, and under all circumstances the head should be protected from the direct rays. Let it also be remembered by the physician that sun-baths may increase the body temperature two or three degrees, cause nervous disturbances, irregular heart action, and are contra-indicated in advanced neurasthenia, in temperature cases and where there is a tendency to hemorrhage.

Again, to tell a person afflicted with pulmonary tuberculosis that he must go for a walk, or must exercise every day, may or may not be advisable. Advice as to exercise must depend on the physical condition of the patient. Febrile cases require both mental and physical rest. Visits from friends, prolonged conversations, or any form of mental excitement should be avoided. On the other hand, non-febrile cases may be permitted to exercise, but the amount and time for taking the same should be definitely regulated by the physician and not left to the discretion of the patient. In any event it should never be carried to the point of fatigue. If walking is the form of exercise prescribed it should be indulged in during the early morning and late afternoon hours in the summer time and late forenoon and early afternoon hours in the winter time. It has been said exercise kills but rest cures many consumptives.

It is also fallacious and absurd to instruct a patient to remain out of doors as much as possible without explaining how to begin this therapeutic measure, or when to modify or vary his conduct as circumstances may require. While the open-air treatment, under proper conditions, increases the appetite, promotes digestion and assimilation, stimulates tissue changes and strengthens the nervous system, it is neither specific nor self-regulating. The pendulum of thought and practice has swung from one extreme to the other; from closed rooms to open air. The former is always to be condemned; the latter has its limitations.

In this age of hysteria in politics, religion and medicine, perhaps it is not at all strange if exaggerated views and unscientific methods exist. How many robust persons, much less those suffering from pulmonary tuberculosis, can be suddenly subjected, both day and night, to open-air treatment in severe cold or stormy weather without being made ill?

When the outdoor temperature is low, whether the patient occupies a tent, sheltered porch, veranda or window tent, he should be instructed to begin the treatment gradually, and not until he has become acclimatized attempt to remain out both day and night. At the beginning he should go in at sunset; later on, if thought advisable, he may be exposed to the night air. He should be told that when he feels uncomfortable or suffers from the cold it is time to go indoors. He should also be told to dress in a warm room or tent and avoid getting chilled, and to remain indoors on very windy or stormy days and to avoid draughts.

Volumes have been written and countless sermons preached on the evils of bad air and the benefits to be derived from outdoor air. Nevertheless, it is poor hygiene and positively productive of bad results to subject weak, sensitive, febrile patients who do not eat well and who are anemic to prolonged exposures during very cold weather.

After becoming acclimatized, non-febrile patients who eat well and who do not feel uncomfortable or suffer from the cold should be instructed to remain outdoors as much as possible.

The following system is followed by Dr. Carl Spengler of Davos:

1. Non-febrile patients begin their daily outdoor treatment as soon as the lying-out rooms are warmed by the sun or when the temperature outside makes exposure comfortable without the aid of sunshine.

2. If the outside temperature is low, only those who eat well are permitted to remain out for a long time.

3. Patients are not permitted to remain outside if they feel cold and uncomfortable.

4. As a rule, after dinner, they are required to remain out of doors, in bed, or exposed to the sun's rays for two hours. The hemoglobin percentage is also used as a guide to exercise and exposure. If it is low, exercise is restricted, or prohibited entirely, and the time outside limited. Unless this precaution is observed, loss of weight and a condition of inanition resembling progressive phthisis may result. Undoubtedly social and unhygienic conditions are the greatest factors in the spread of tuberculosis and the cause of enormous death rates. However, it is as necessary to individualize in this as in any other treatment. What has just been said must not be construed as a criticism of sane, discriminating methods but as a protest against the abuse of the open-air treatment.

ACUTE AND CHRONIC MILIARY TUBERCULOSIS.*

TUBERCULIN, AN EXCELLENT REMEDY IF PROPERLY USED IN SUITABLE CASES. A FEW EXAMPLES OF HOW TUBERCULOSIS MODIFIES AND IS MODIFIED BY OTHER CONDITIONS. A METHOD OF PERCUSSION DEMONSTRATED.

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In discussing tuberculosis this evening I will not attempt to go into the minutest details, and all the possibilities will not be attempted. There is so much ground to be covered that economy of time is a necessity. I will mention those things which are most important, and will also digress slightly and mention some things in regard to general tuberculosis. Anything which I omit may be taken up in the discussion.

Acute Miliary Tuberculosis occurs in children as well as in adults. Any one harboring tubercle bacilli may develop this condition. Infection may be primary but is usually due to old foci. The diagnosis is certain *only* if we are able to find the tubercle bacillus, and in making the diagnosis we at the same time pronounce the doom of the patient. In this condition the history is very important. Ascertain if there is any tuberculosis in the family, and if the patient has had any previous complaint which might be interpreted as a tubercular infection. In seeking the bacillus, examine the urine, sputum and cerebro-spinal fluid. The onset may be acute or gradual. There are cases in which the patient dies in a very short time. In most cases the onset is insidious. The patient has not felt well for some little time. There has been loss of weight, loss of appetite and languid feeling. Irregular temperature may have been present with or without sweats. All the symptoms gradually become more marked. Any of the organs of the body may be involved. If the lungs are especially involved the case may resemble pneumonia, and in those cases where the lungs show much involvement the one thing which attracts our attention is the cyanosis. This is entirely out of proportion to the other lung findings. The pulse is rapid and the breathing hurried. In considering the cyanosis as being due to miliary tuberculosis, we should exclude the possibility of asthma, emphysema, enlarged bronchial glands, or cardiac lesions. Be sure there is no pericardial effusion. Cough is usually present. The fever may be intermittent, remittent, or continously high. There may be metastatic skin lesions. Those who are skillful enough may examine the choroid for tubercles. See if the spleen is enlarged, and examine the urine for diazo. The diazo is found in most cases where temperature is high. In any case of tuberculosis if diazo is positive and the foam is *yellow*, the prognosis is bad and within four weeks. If a feverless case of tuberculosis shows the diazo, the prognosis is bad but not immediately. If we find in our case pleural or pericardial involvement, these point to tuberculosis. Differential diagnosis deals especially with typhoid. In the latter we find Widal, slower pulse, and no cyanosis. Obscure septic cases, sinus thrombosis, severe influenza and some other conditions may mislead.

Chronic Miliary Tuberculosis. In this condition the patient may live for years. Many of these cases come under the heading of lower lobe tuberculosis. In lower lobe tuberculosis the appetite remains good, and while there may be hemorrhages from time to time, the progress is very slow indeed.

We must differentiate chronic and lower lobe tuberculosis from bronchiectasis. This latter condition is one about which we in general prac-

*Read before South Chicago Branch of Chicago Medical Society, Dec. 23, 1913.

tice know too little. It is found especially in the lower lobes, back or axilla, although it may locate in apex. In such a case we find a "rale center," which always remains the same. Whenever we choose to listen we find the same thing present. Tubular breathing is heard also, and while we expect to find dulness in association with tubular breathing, in bronchiectasis we often find no dulness, and if we do, this dulness is generally only relative dulness. There are no tubercle bacilli in the sputum. This is the one process in which we especially expect to find the typical "clubbed fingers." A chronic process with much sputum leads to "clubbed fingers." We find them in tuberculosis *if cavities exist*. In bronchiectasis there is much sputum, the patient showing the "mouth full" expectoration, especially in the morning. The sputum may be very offensive.

An x-ray picture is of great diagnostic value in most lung conditions.

Diagnosis by Means of Tuberculin. Just a few words to show the relative value of the different kinds of tuberculin in diagnosis.

Morro Test shows most cases of active tuberculosis and not the latent forms. It may be positive and the patient at the same time be tuberculosis free. It is negative in some cases of proved tuberculosis.

Von Pirquet. A positive Von Pirquet does not mean a great deal, as it shows positive in healed and latent tuberculosis as well as the active types. If it is negative it then has a value. In children under eight years of age it is very valuable, as there is little or no healed tuberculosis in patients under this age, and if the test is positive we know the process is an active one. It is well, however, to employ the above two tests in any doubtful case. They may both be used simultaneously, one not interfering with the other.

The most exact test is the *subcutaneous injection of tuberculin.* It is prepared ready for use by a number of reliable firms. It is suitable only for those cases which have little or no temperature. Observe the pulse rate and the temperature of patient for three days, keeping a record of same. Injection should be made in the morning, so the results can be better watched. A reaction may occur in from six to twelve hours, or later. A reaction occurring even the next day after the test is made is to be seriously considered, as some reactions are delayed this long. See the patient the next day, and note the findings. See if there is any increased sputum, any increase in the rales, more pain, etc. Ask if there has been headache, feeling of malaise, etc. Redness at site of injection may be due to the glycerin content of the tuberculin but this should last only 24 hours. If the temperature shows a rise of at least one degree, the reaction is positive. If there is doubt as to the reaction, repeat the same dose after about three days. If not satisfied then, give a larger dose on the third injection, using two or two and one-half times the amount of the initial dose. There are cases where it is well to repeat the initial dose several times, as the temperature may show irregularities which are unsatisfactory. Failing to get a certain positive reaction, then use a larger dose. If the test is positive the pulse quickens. After an injection of tuberculin, the lymph glands swell, but this will occur whether they are tubercular or not.

Tuberculin Treatment. Tuberculin is not suitable for acute miliary tuberculosis, or any rapid process. No one knows the dose of tuberculin. It is a remedy which is best employed in an institution, as the treatment is a protracted one and the patient should be under our control. The patient should have a thermometer of his own and know how to record temperature and pulse if not being treated in an institution. It requires from six to twelve months to accomplish much. In cases which show little or no fever, old tuberculin may be employed.

In cases showing fever, one of the newer tuberculins, such as B. E. or T. R. is better. B. E. is an excellent preparation, and with it the treatment may be carried out with little or no reaction, if the physician is satisfied to go slowly, beginning with a very minute dose, and considering a rise of even one-tenth degree of temperature as constituting a reaction. The newer tuberculins are not toxic in the same degree that the old tuberculin is. Tuberculin causes a hyperemia of tubercular areas and increased function of the lymph glands (swelling). Large doses may cause decapsulation of diseased areas and acute miliary tuberculosis may be the result. Best results are obtained in cases without temperature, or with

very little. Those cases which have fever should be put to bed and kept there for eight to ten days. As we know, the high fever or whatever fever exists is due especially to mixed infection. The Germans use a preparation called electrargol in order to aid in ridding the system of this mixed infection. It is injected by needle. A chill and increased temperature may follow its use and there then follows a reduction in temperature. Repeat the dose if necessary and as often as necessary. This remedy is a silver colloid. There are other similar preparations used for the same purpose and I mention this one only because I have employed it. Vaccines may give good results in these cases of mixed infection. If all means fail to reduce the temperature, very small doses of one of the newer tuberculins may be tried. If the fever shows a tendency to reduce slightly, continue the tuberculin, but with great caution. If the fever is due to cavities and softening and the case is a suitable one for the employment of nitrogen in the pleural cavity, it is well to use it. This compresses the lung and puts it at rest, allowing healing. Later tuberculin may be employed. There are cases in which the nitrogen cannot be properly employed on account of pleural adhesions preventing collapse of the lung. In such cases, resect the ribs sufficiently to allow the desired collapse. This nitrogen must be repeated at intervals if needed.

In every case treated by tuberculin, use small doses. If a reaction is produced wait until it has receded and then resume treatment, repeating previous dose, or giving even a smaller dose if reaction has been rather severe. Usually about two injections per week are given. If too great a reaction is excited, it is difficult to go ahead with the treatment on account of the hyper-sensibility to tuberculin which results. In such instances wait at least 10 days and then begin again with a much smaller dose than the one last employed. In cases where the glands are involved, the physician may expect marked reactions. The body weight should increase. If not, use arsenic in conjunction with the tuberculin. If the weight remains the same, continue the tuberculin. If the reactions are marked, but the weight in spite of this shows increase, continue the tuberculin. Tolerance to tuberculin is a good sign and leads to a good result. Intolerance is shown by decrease of weight, insomnia, headache, loss of strength, fever, etc. If intolerance is disregarded and tuberculin employed in the face of it, an acute form of the disease may be precipitated. Hemoptysis is not a contraindication to tuberculin. Wait until all blood has been absent from sputum for three days and then resume gradually. Hemoptysis is an expression of the lung hyperemia caused by tuberculin, and if used cautiously such cases show a complete healing.

If for any ordinary reason one is forced to discontinue tuberculin treatment for a period not exceeding four weeks, the dose may be resumed where left off. Otherwise, begin treatment all over again. If tubercle bacilli persist in the sputum after the course of treatment is ended, wait two or three months and then begin a new course of tuberculin, employing larger doses. Best results are obtained in apex cases. Chronic cases show good results as regards most of the symptoms, but healing is not so good. Tuberculin may be employed by mouth as well as by the needle, and the same principles apply.

Contraindications to tuberculin are nephritis, acute cases with softening, cases associated with diarrhea. Syphilis, pregnancy and heart disease are not considered as contraindications.

Diminished reaction to tuberculin is shown in advanced tuberculosis and rapid tuberculosis. There are several diseases which also are supposed to show diminished reaction, but the main one is measles. Children who have recently had measles do not react to it, and they are, as we would expect, very prone to tuberculosis. In institutions children who have tuberculosis and who fail to react to tuberculin should be separated from the other cases. In other words the tubercular patient who reacts to tuberculin shows that his system is in fighting trim. Children under one year of age react to tuberculin only in about one per cent. of cases where tests have been made. From this time on the percentage increases, and from 11 to 14 years, the reaction occurs in about 95 per cent. Children under one year do not often contract tuberculosis, but if they do it is very fatal. Children under three years of age especially should be kept away from tubercular individuals. A mother if tubercular should not nurse her child.

Relation of Tuberculosis to Other Conditions.

The Heart. It would be generally supposed that tuberculosis in the presence of cardiac disease would mean a more unfavorable prognosis. This is not the case if the heart lesion be one in which compensation is fair and the general condition of patient is also fair. Such cases as mitral regurgitation, mitral stenosis, etc., cause a passive congestion of lungs. This hinders the rapid development of tuberculosis on the same principle as Bier's hyperemia.

The heart may show a murmur in the presence of tuberculosis without organic changes. This may be due to adhesions with pericardium pulling the heart out of shape and causing a torsion. Such murmurs are always systolic.

Nephritis. Nephritis alone causes a high blood pressure. If associated with tuberculosis of upper lobes the pressure is not high; if it be a lower lobe tuberculosis the pressure is high.

Diabetes. Many of these cases die of tuberculosis. If the mother shows diabetes, her children are especially prone to tuberculosis.

Sarcoma. In certain cases of tuberculosis of glands proven to be such by animal inoculation, the diseased glands afterward undergo sarcomatous degeneration and the patient dies of sarcoma and not of tuberculosis.

Joints. A pleural effusion, if it be due to tuberculosis and if it be absorbed by the system, may cause articular swellings, which are very much like gout or acute rheumatism. The smaller joints are especially involved and the inflammation may extend from one joint to another. Such cases are due entirely to the absorption of the effusion.

Syphilis. This disease may occur in the presence of an old, almost healed, tuberculosis. In such cases mercury must be used with care, as by its alterative action it may cause absorption of the fibrous tissues surrounding tuberculous areas and the latter disease be provoked.

Liver. Fatty infiltration especially likely to occur in protracted cases. Give patients 40 grams milk sugar in the morning. Save urine from that time on for about five hours and test for milk sugar. If over one gram found in the urine passed, it shows fatty infiltration. The liver is unable to change the milk sugar to glycogen, on account of the pathology.

Phthisio-phobia. Certain persons who live in dread of tuberculosis will react to tuberculin when they show absolutely no lesions. Under tuberculin treatment about one-half of them show good results and 50 per cent. remain unchanged.

Consumption, or Pulmonary Tuberculosis. This condition is seldom seen under 10 years of age. It is frequent from 16 to 17 years and upward. Consumption is really the tertiary stage of tuberculosis, and is usually seen about 10 years after the primary lesion. Primary stage would be the initial infection of the tissues and neighboring lymph glands. Secondary stage corresponds to the skin tuberculides, phlyctenulae seen in eye, bone lesions, peritonitis, pleurisy, etc. In this stage there are many periods of relapses, the patient being better or worse. The third stage is consumption. Here we have destruction of tissues, etc.

Here follows a demonstration of percussion methods and what we may elicit by having a uniform method of marking off the percussion findings.

Demonstration of Percussion of Thorax.

We will now present a method of percussion which may be of value to the physician who wishes to make a quick routine examination. It not only establishes a system of examination, but results in an exact examination of the patient. We mark with a pencil the percussion findings. A good pencil to use is one employed for marking glass or porcelain. The "Schwan" which is an imported pencil is satisfactory. When we finish we have an exact picture before us, so we are not likely to overlook anything. We mark the width of the apices in the rear and in the front, the lower lobe of the lung in the rear at full expiration and full inspiration, upper border of liver, absolute and relative dulness of heart. Traube's space, splenic dulness, and we also mark any area which shows dulness, relative dulness or hyper-resonance. Such an examination cultivates more precision. Any slight deviation from normal puts us on our guard at once. The markings allow exact comparison of the two sides. In this instance I had expected to present a normal subject. I invited the young man you see to come with me tonight, and it was only after examination that I found him not to show normal percussion findings as you will see. We begin at the apex posteriorly. Very often we find trouble posteriorly while anteriorly there is nothing to be

found. The patient sits straight with the head and neck bent slightly forward. A stool or chair without a back is best, in order that the examiner can have easy access to the thorax. Begin over toward the neck internal to the apex and percuss toward the apex. As soon as resonance is heard we have reached the inner border of the apex. Do not make the mark at the inner or the outer border of the finger used as pleximeter, but let the mark correspond to the center of the finger. Do not use a too strong percussion stroke. Now begin percussing external to the apex border, percussing inward, and mark this as soon as resonance is reached. The width of apex is normally about 7 c. m. in the adult. In this subject the two apices are not the same width. The left is much narrower as the markings show, and we are at once suspicious. There is also a little dulness extending downward from the apex. I have auscultated and found suspicious rales at this point, but very few. The apex is narrow and there is not much on ausculation. From this we know the process is old. A wide apex and much on auscultation means a fresh process. In rare cases we may find a wide apex as a result of a cylindrical bronchiectasis. Such cases usually follow a healed tubercular process in this locality. It may sound like a cavity on auscultation, but there are no rales and also no expectoration. Other things which may cause a wide apex are emphysema and chronic asthma, pneumothorax, cavity. A narrow or obliterated apex may result from tuberculosis, intra-thoracic tumor, spinal curvature, very extensive effusion. In every case where the apex shows changes which we believe to be tubercular, examine very carefully the lower border of the lung on the same side, noting carefully if the expansion at lower border is normal.

Bronchial Glands. These are found in the inter-scapular region, at about the level of second dorsal vertebrae. There may be dulness at this point if they are enlarged to a sufficient degree. Look especially for their enlargement if there are other glands in the body enlarged from tuberculosis. In children who have a brassy cough and difficult breathing, suspect enlarged bronchial glands. However, if this embarrassment of respiration be congenital, then the thymus.

Angle of Scapula. Look for dulness at this point. Draw arm upward and forward to pull the scapula out of the way. Always listen well at this point also.

Lower Border of Lung Posteriorly. This is situated approximately the breadth of the hand beneath angle of scapula. Naturally this varies. Some people have longer chests, and some have wider hands. Mark the lowest point of resonance on natural expiration. The patient then takes a deep breath and while the breath is being "held," mark the lowest point of resonance, thus showing the mobility of the lower border of the lung, or the degree of expansion. This should be from 4 to 5 c. m. If the lower border of lung is about normal, but little or no mobility, think of pleural adhesions. If the border is higher than normal, think of pleural effusion, pleural thickening, lower lobe tuberculosis, intra-thoracic tumor, syphilis of lung, sub-phrenic abscess, liver hypertrophy. Some cases of bronchiectasis show quite a little dulness. If lower border is lower than normal, think of chronic asthma and emphysema, pneumothorax, compensatory hypertrophy of the lung at this point. In pneumothorax the deviation from normal is marked and there is absolutely no mobility.

Apices in Front. Percuss the width of these and percuss also over clavicles for any difference in resonance.

Heart Dulness. Absolute and relative dulness is marked off. Heart dulness increased may mean shrinkage of lung, thus exposing the heart. Pericardial effusion may be the cause of the increase. In pericardial effusion the angle between the upper border of liver and the line of relative heart dulness is no longer a right, but an obtuse angle. Also in pericardial effusion, the area of dulness may extend beyond the apex beat, if the latter can be found. Cardiac hypertrophy or dilatation as we know causes increased area of dulness. The heart dullness decreased may mean chronic asthma, emphysema, compensatory hypertrophy of the lung at this point, pneumothorax, etc. The position of heart may be changed. "Drop Heart" is sometimes found in relaxed tubercular patients. Pneumothorax, pleural effusion, various adhesions to pericardium, etc., may cause heart to change its position.

We notice on this subject that the apex beat is too far to the left, extending almost to the nipple line, and that the heart dulness is increased transversely. In young persons the apex beat may extend further to the left than in the adult, but in this case we would suspect some deviation from the normal on auscultation. On using the stethoscope we find a systolic murmur and accentuated second pulmonic. The boy (18 years) has a mitral regurgitation. Now, if the process in the lung is tubercular, it bears out the statement that certain cardiac lesions deal kindly with consumptives, for the young man, while he has a lung lesion, has never felt sick enough to consult a physician. (This case was afterward proven to be tuberculosis.)

Upper Liver Border Anteriorly. Test mobility of lung at this point.

Spleen. Situated in mid-axillary line. Use very light percussion or you will fail to find this organ. To determine Traube's space first determine location of apex beat of heart. Draw a line outward from apex, i. e., toward vertebral column. Below this line there should be tympany. Traube's space is bounded above and to the right by the apex of heart and left lobe of liver; below and to the left by the spleen. This space, as we know, should show tympany. This space is obliterated in left side pleural effusions, provided they are not encapsulated. This is a rather important point, for in cases where we are uncertain as to the existence of effusion, if Traube's space is resonant, it is good evidence that there is no effusion. This space could be obliterated also from other causes, such as marked enlargement of spleen, or cardiac or hepatic changes. In chronic asthma, emphysema, pneumothorax, etc., we may be unable to find any splenic dulness because the amount of resonance is too great.

Areas of Dulness Which Are Not Normal. This may mean effusion, intrathoracic tumor, spinal curvature, aneurysm, pneumonia, tuberculosis, enlarged heart.

Areas of Hyper-Resonance. This may mean cavity, compensatory lung hypertrophy, pneumothorax, emphysema, etc. In very rapid lung processes there may be hyper-resonance over both lungs.

HYDROCEPHALUS INTERNUS. LUMBAR DRAINAGE BY UTILIZATION OF A MENINGOCELE SAC AS A DRAINAGE TUBE.*

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Anatomical investigation has disclosed that the regulation of cerebro-spinal fluid pressure is dependent upon the venous and lymphatic circulation. This has been established largely through the investigations of Leonard Hill. The communication between the intra-ventricular and para-ventricular spaces lies in five routes, viz.:

1. Through the foramina of Majendie and Luschka in the roof of the fourth ventricle.
2. Into the longitudinal sinus through the intermediation of the Pachionian bodies from the arachnoid space.
3. Through the lymphatics of the cerebral nerves, by the prolongation of the arachnoid upon their roots, especially the optic, olfactory and auditory nerves.
4. Possibly there is a communication with the mucus membrane.
5. Communication with the spinal arachnoid space through the cisterna magna.

It is evident that the internal type of hydrocephalus is therefore amenable to treatment by establishing communication between the internal and external spaces. Obstruction to one or more of these routes will disorganize the cerebro-spinal pressure resulting in dilatation of one or more of the ventricles. This dilatation may take place in any of the ventricles, though more rarely in the fifth ventricle. In one autopsy specimen in an embryo a dilatation of the fifth ventricle alone has been observed, leading to the suggestion that this ventricle may have some hitherto unsuggested internal secretion functionating in the fetus.

1. Hydrocephalus may be congenital or acquired, internal or external. It is a symptom rather than a disease. It results from diseases of the cerebellum, corpora quadrigemina and crura cerebri, interfering with the choroid plexus and thereby causing an obstruction of the foramina of Majendie and Luschka.

2. It frequently results from cerebro-spinal meningitis, syphilis and chronic infections.

*Read before the Southern Surgical and Gynecological Association at Atlanta, Georgia, Dec. 18, 1913.

3. Arrested brain development. Styles, the first advocate of this latter theory, attributes the failure of the usual operation for hydrocephalus to this theory.

Medicine has ever proven futile in the treatment of this condition and the surgical treatment of hydrocephalus dates its inception with the earliest days of surgery. Until recent years, however, the various procedures have been attempted without a thorough knowledge of the pathologic problems involved.

One might establish the surgical history of hydrocephalus in two periods, the first, including the procedures in which simple arrest of the disease was attempted through bandaging the rapidly developing congenital cases, and the early attempts at external drainage by puncture through the fontanelles. These efforts were never founded on an accurate knowledge of the pathology of the condition and the same may be said for subsequent more surgical procedures, such as sub-temporal or sub-dural drainage.

Sub-temporal and sub-dural drainage have been advocated by such men as Miculicz, Keene, Mayo Robson, Broca, Southerland and Watson and Morton. These surgeons have used various substances to establish drainage tracts, such as strands of catgut, horsehair, Cargyle membrane, various types of tubes and prepared arteries and veins.

Hudson has advocated the use of silver wire drainage tubes attached to a silver wire filigree sub-temporal mat. All of these procedures have been attempted without accurate knowledge of the normal drainage routes and have aimed either at drainage direct from the lateral ventricles through the skin, or underneath the muscles, or to the sub-dural spaces.

Almost without exception the foregoing procedures have resulted in ultimate failure; temporary improvement has occurred in some cases, a case of Broca's, reported as successful, not having been followed sufficiently to warrant any definite permanent conclusion.

Bruce and Styles advocated and, in one case, established drainage through the roof of the fourth ventricle. Temporary improvement ensued and was later followed by death. Von Bramen and Antone and Rehm have advocated callosal puncture for the drainage of the lateral ventricles into the sub-dural spaces apparently with beneficial results in certain congenital cases, in some cases of epilepsy and in cases associated with meningitis and cerebral tumor. Balance has advocated the ligation of both carotids at intervals of several days in an effort to retard the intra-cerebral pressure. Pays has advocated drainage of the lateral ventricles directly into the longitudinal sinus, where there is a lower pressure, by inserting a portion of the saphenous vein into the sinus, the other portion being inserted into the lateral ventricle, the venous valves preventing back flow from the sinus into the ventricle.

More recently Pussep (Arch. fur Kinderheilkunde, 1912 B. 95, No. 3-4) has advocated subarachnoid tube drainage through a trephine opening, the tube ending in a dural flap and repeated aspirations through the scalp at the trephine site for the removal of excess of fluid. The tube is later removed.

He has operated on twenty cases, eighteen being children. These were largely cases of chronic hydrocephalus, though cases of acute hydrocephalus and hydrecephalus due to brain tumor were also treated. The immediate results were encouraging and there was but one death possibly attributable to the operation.

The multitude of procedures advocated for drainage from the ventricles into the cerebral arachnoid spaces or into the muscles is sufficient evidence that as yet a satisfactory method has not been evolved. The almost universal failure of these procedures is additional evidence that they are not the routes of choice. The only cerebral procedures that appear to be based on anatomical principles are those of von Bramen (the calossal puncture), that of Pays (drainage into the longitudinal sinus), and that of Pussep (subarachnoid drainage combined with subtemporal aspirations).

The investigations of Cushing appear to offer a more logical and natural route of drainage through the spinal arachnoid spaces into the subperitonal spaces, in the type where there is no obstruction between the ventricles and the spinal spaces.

Heile has sutured the meninges of the cord to the peritoneum of the large intestine in an effort to establish a communication. Ferguson has inserted a silver wire through the fifth lumbar vertebra from the spinal to the peritoneal cavity. Nicholl has proposed the resection of a spinal transverse process and the insertion of a tube of

decalcified bone or glass from the spinal to the peritoneal cavity. He has established such a communication by suturing a tag of omentum to the spinal meninges.

In a number of cases, where he has disclosed the communication between the cerebral and spinal spaces by simultaneous cerebral and spinal puncture, Cushing has placed a canula through the fifth lumbar vertebra connecting the subarachnoid space with the peritoneal cavity. This apparently later establishes a direct subperitoneal drainage where the fluid is taken up by the receptaculum chyli. He believes that this method is especially valuable in cases of hydrocephalus complicated by spina bifida in which a radical closure is established in the posterior portion of the operation. He has carried out subperitoneal drainage in twelve cases with a considerable measure of success.

I report the following case as illustrating the feasibility of relieving hydrocephalus internus by spinal drainage in a case where a communication exists between the cerebral and spinal spaces. The end results illustrate the necessity of maintaining the drainage by a stiff walled drainage tube of some material.

Case Report. Kathleen K., white, female, infant, age six weeks. Prolonged difficult birth at which time both thighs were fractured. Family history, negative in relation to patient. Past history: The prolonged birth was probably due to a deformity of the child's spinal column. The child was nursed normally and has apparently normal rectal and vesical function.

Present Illness: At birth there was a marked kyphosis of the lower thoracic vertebra; above this there was a round fluid tumor mass apparently a meningocele.

A few days after birth this kyphotic area broke down and suppurated for two or three weeks, being healed with great difficulty. About ten days ago a gradual enlargement of the head was apparent, bulging of the anterior fontanelle. This has been becoming gradually more pronounced. Since birth there has been a slight spastic condition of both legs, with a tendency to adduction. There has apparently been no loss of sphincter control of the bladder or rectum. Until three weeks ago the patient complained when irritated about the perineum, indicating sensation present in that area.

Physical Examination: The child lies, with head extended, the thighs flexed and adducted, the legs extended and spastic, bilateral pes equinus. The facial expression is normal, except for a mongolian type of right eye. The face begins to show the slight querulous expression seen in the later stages of hydrocephalus. The mucous membranes are normal, no general glandular enlargement, no evidence of syphilis or tuberculosis, von Pirquet negative.

Head: There is a general globular enlargement of the cranial portion of the head, the distended veins, the taut skin and bulging fontanelles of the typical hydrocephalic. The nasio-bregmatic measurement is 23.5 cm. The largest circumference 2 cm. above the external auditory meatus is 40 cm. The transverse diameter measuring between the external auditory meati is 23 cm. The sagittal and longitudinal sutures are ununited. The skin is bulging and pulsates with respiration. The head is drawn well back to the cervical muscles so that the occiput approaches within an inch of the cervical vertebræ.

Thorax: There is a marked bulging on the left side of the thorax, a flattening on the right, apparently a birth deformity. The cardiac sounds are apparently normal for a child of this age. In the lower dorsal portion of the spine there is a marked kyphosis extending over the sacral and thoracic vertebræ. Here there is a typical spina bifidia formation, with absence of several of the vertebral arches. The cord evidently lies immediately under the blue meninges, which are apparently fused with the skin on either side. (See Fig. 1.)

Fig. 1. Case Kathleen K. Note Spina Bifida Formation and Presence of Meningocele.

In the mid-thoracic region, about two or three vertebral spaces above the upper border of the spina bifida formation, there is a smooth globular sac projecting from the skin in the mid-line. This sac

is evidently a typical meningocele formation about 6 cm. in diameter and communicating with the subarachnoid space of the cord by a small pedicle. This sac evidently contains clear cerebro-spinal fluid. There is a complete sensory paralysis below the mid-portion of the spina bifida. There is evidence of some motor tracts persisting in the occasional adductor response from tickling the perineum. There is also apparent sphincter control of the anus and bladder. The spastic condition of the legs and thighs, together with a chronic flexion of the right great toe, indicates that a deep lesion, due to pressure on the cord, has been present for some time, that the lesion is an irritative one and that there are some motor fibers remaining.

Diagnosis: Spina bifida, meningocele, hydrocephalus congenitalis interna, thoracic kyphosis, lower sensory paralysis, motor irritative lesion of thoracic portion of the cord, spastic diplegia.

Fig. 2. Case Kathleen K. Note Marked Kyphosis and Nonfusion of Transverse Processes. Note Hydrocephalus.

Operation: In the light of the hopeless future offered by medical treatment and with the hope of arresting the progress of the rapidly developing hydrocephalus, direct drainage of the cerebro-spinal spaces was established by burying the meningocele in the lumbar muscles.

Providence Infirmary, April 2, 1913. After administering a few drops of ether, an area about the spina bifida and meningocele was infiltrated with quinine and urea, the spinal cord itself was also infiltrated with quinine and urea near the meningocele sac.

Upon opening the meningocele sac a small stream of clear cerebro-spinal fluid arose from small bony communication with the canal. There was no evidence of cord tissue in the sac. The edges of the sac were everted and sutured into a lateral deep incision into the lumbar muscles. The skin was sutured to the sac by interrupted suture. The child's condition being excellent, I then dissected the skin from the above cord and its membranes over the spina bifida. The cord was found about one-third its normal diameter, flattened antero-posteriorly in its membranes. Carefully dislocating the cord laterally I was able to chisel a groove one-half inch deep through two of the vertebræ forming the prominent portion of the kyphosis. The cord was laid back in this groove, wrapped in Cargyle membrane and the skin sutured over all.

The patient was very much depressed at the end of the fifty minutes' operation, but soon recovered from the temporary shock.

Post Operative: Within three hours of the time of operation there was a reduction of 3 cm. in the greatest circumference of the head. The patient lived twenty-six days after the operation, suffering marked gastro-intestinal disturbance and eventually dying from inanition. The drainage tract functionated splendidly for the first two weeks. There was marked relief in the retraction of the neck and persistent reduced diameter of the skull. The day following the operation the skin that was formerly tense and bulging over the anterior fontanelle and the sagittal suture became lax and lay loose, sunken into the skull cavity. It appeared that the drainage sac which was drawn rather taut into the lumbar space required a certain degree of intraspinal pressure to force the fluid through the small opening in the sac at the spinal portion. We would note occasionally that the fluid would accumulate in the skull cavity to the point of tension of the skin over the fontanelle and a few hours later this fluid would have drained out. On one occasion this occurred to such an extent that the parietal bones overlapped. On other occasions when the skull was distended with fluid continued pressure over the fontanelle would force the fluid through the sac. These evacuations were always followed by relief of the neck retraction and never associated with convulsions.

There was no leaking about the suture lines. The child began to increase in weight a few days after operation, but on the fourteenth day it was noted that the fluid was not draining. The sac was loosened and the opening to the cord was dilated, the sac sutured back into place. Drainage persisted for twenty-four hours, when the obstruction again returned, apparently due to edema of the sac membranes. From this time until death it was necessary to dilate the opening into the sac every few days. There was apparently an obstruction at the junction of the sac with the cord membranes. One could readily note the appearance of the obstruction

by the restlessness of the child, later convulsive movements of the arms and face muscles and a peculiar whining animal-like cry. The fontanelles would bulge and be tense to the touch. Each time after freeing the opening there would be a relief of the pressure symptoms and for a short period the tissues over the fontanelles would be relaxed and soft and there would be a decrease in the circumference of skull. From the time that the frequent openings in the sac were necessary there was more or less constantly seepage of cerebro-spinal fluid into the dressings.

After the tenth day there was a more or less constant diarrhea and the child gradually lost weight. At no time was there any distinct loss of sphincter control. At no time was there any definite improvement in the reflexes of the lower limbs. Several days before death, which occurred on the twenty-eighth day, the child lost all visual reflexes. The child died after several hours of hypopyrexia, during which time the convulsive movements of the arms were almost constant.

Post Mortem: An autopsy was not permitted, but through a small incision in the posterior fontanelle I was able to determine that the lateral hemispheres had been almost entirely destroyed, only a small thin sac wall representing their remains. Lifting up the meningocele sac, I found almost entire obliteration of the sac at the neck where the sac was given off from the cord membranes. At the point where the sac was inserted into the lumbar muscles there was an oval-shape glistening depression that appeared to be covered with a thin layer of tissue other than the normal musculature. It would have been interesting to have ascertained the circulatory and lymphatic vessels in this new tissue formation.

CONCLUSIONS.

Hydrocephalus internus is due to the obstruction of one or more of the natural drainage routes of the cerebral fluid.

A knowledge of the anatomical drainage routes of the cerebral sinuses is essential to the application of surgical drainage in cases of hydrocephalus.

Callosal puncture, drainage by the longitudinal sinus and the combined sub-arachnoid drainage and aspiration method of Pussep seem to be the cerebral routes based on anatomical principles.

Drainage through the spinal spaces appears to offer a better field of experimentation where careful investigation discloses communication with the intra-cerebral spaces. The route is more accessible than the Callosal route, less difficult to perform than the longitudinal sinus procedure and an eminently more surgical procedure than the repeated aspirations of Pussep's method.

Drainage by the spinal route may be either subperitoneal or intramuscular.

A meningocele sac may be utilized as a drainage tube but should be supplemented by an intrasacular tubular drain.

The tender age of the subjects, the usual accompanying destructive lesions of the hemispheres and the often attendant malnutrition will keep the surgical treatment of hydrocephalus internus a treatment for alleviation of symptoms and arrest of progress rather than one of radical cure.

THE IMPORTANCE OF URINALYSIS DURING PREGNANCY AND THE SIGNIFICANCE OF THE POSITIVE FINDINGS.

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The analysis of the urine of the pregnant woman at frequent and regular intervals is so essential in distinguishing the safe from the hazardous cases and as an indication for the adoption of prophylactic and curative therapeusis, that occasional emphasis of its necessity may not be inopportune.

A case illustrative of its importance follows:

Mrs. S. A. R. on Nov. 25, 1912, complained of "heart-burn and nausea occurring in the late afternoon and early evening." The condition had existed for ten days and she thought she was getting worse.

Her past history revealed that she was twenty-seven years of age, had always enjoyed excellent health, had been married six years without becoming pregnant, had menstruated regularly and painlessly, but had not had her menses since Oct. 14.

Physical examination showed well-nourished, apparently healthy woman, free from detectable organic lesion. Urine negative. Blood pressure normal.

A provisional diagnosis of pregnancy was made.

Dec. 25 patient complained of "heart-burn and nausea, with frequent attacks of vomiting in which she invariably lost her evening meal." She enjoyed and retained her morning and midday meals. Her nutrition was good, the presumptive evidences of pregnancy were marked and the patient appeared to be a subject of "evening sickness."

Magnesium carbonate controlled the pyrosis, the attacks of nausea and vomiting became less frequent and by Feb. 1, 1913, had ceased.

The urine was examined each month until the sixth of pregnancy; thereafter, every two weeks until delivery.

The patient seemed in good health and presented no unfavorable symptoms until June 27 and 28, when

she complained of "sleeplessness for the last two nights." On June 28 urinary examination showed positive tests (Heller's and heat and acetic acid) for albumin—24 hours later, Esbach read 2.5 gms. to the liter.

Edema of the lower extremities was rapidly increasing and slight headache had developed.

The patient was immediately sent to the hospital, 25 miles distant, and placed under the care of an expert obstetrician.

On arrival, specimen of urine showed 4 gms. of albumin to the liter, also hyaline and granular casts. Blood pressure 185.

She was placed in bed and eliminative treatment prescribed. The amount of albumin decreased slightly, severe headache developed, edema increased, nausea and vomiting occurred and at 8 a. m., July 1, patient had a violent convulsion.

The obstetrician in charge, finding the child in good condition and unengaged, the cervix undilated and rigid, performed Cæsarean section, obtaining a child in excellent condition. The mother made a rapid and uneventful recovery. Four months later urine and blood pressure normal.

The happy outcome in this particular case is the direct result of the admonition given by the detection of the marked albuminuria and the subsequent judgment and skill of the obstetrical surgeon.

The edema of the legs could be readily accounted for by the intrapelvic pressure exerted by the gravid uterus.

The first slight headaches, while arousing suspicion of renal disturbance and indicating an investigation of the urine, in the absence of urinalysis, should not have caused the patient to immediately enter the hospital.

The high blood pressure and toxemia would explain the insomnia.

Had the convulsion occurred at her country home, the outlook for the patient with a child unengaged and with a rigid cervix would have been grave; the possibilities of a live child would have been greatly reduced.

The Occurrence of Positive Findings.—The statistics for proteinuria and carbohydraturia during pregnancy show a great diversity of figures. The differences, in a large measure, are due to the delicacy of the methods employed. Those using very sensitive tests report a high percentage, while others, utilizing tests equally reliable clinically, but less delicate, have noted a considerably lower percentage of positive findings. In several instances, however, this explanation fails to account for the difference.

Schroeder found albuminuria present in 5 per cent of his cases; Ott, in 6 per cent; Fisher, in 25 per cent; Little, in 50 per cent; Sondern, in 62 per cent; and Jaeger, in 70 per cent; with the most delicate tests.

The figures for melituria are equally at variance. Williams observed positive findings in 0.8 per cent of his cases; Hirschfeld would put glycosuria at 10 per cent; Gerard and Oui found lactosuria alone in 12 per cent of their cases, while Ludwig reports this sugar present in 46 per cent of 82 patients examined.

The meaning of the presence of albumin, carbohydrate, or casts, is of more practical interest than the disagreement of the statistics of various authors.

Albuminuria.—Having detected the presence of albumin in the urine of the pregnant woman, it should be determined whether it has antedated or has occurred during gestation. Is it nephrogenous or extrarenal in origin? Its amount. Is it pathologic or physiologic? Is the nitrogenous output normal and is its derivation unchanged?

The anamnesis, the physical examination, and the first urinalysis will tend to exclude the nephritis antedating conception. The presence of albuminuria and cylindruria accompanied by increased pulse tension, exaggerated second aortic sound, and enlargement of the left ventricle, in the early months, point definitely to renal disease beginning before pregnancy.

In the absence of a record of the chronic process, it may be impossible to determine at once whether we are dealing with an acute exacerbation of chronic nephritis or an acute nephritis developing during pregnancy. With this exception, the urinary findings and clinical symptoms of acute renal disease make it readily recognizable.

The presence of albumin accompanied by casts and characteristic renal cells in large numbers demonstrates the lesion in the kidney. We may have albuminuria of prerenal or intrarenal origin and no cylindruria or marked cyturia. In such instances, if the amount of albumin is small, it would be differentiated from that of the urinary tract with difficulty.

Albuminuria, associated with pyuria, bac-

teriuria, and mucinuria, in the absence of cylindruria, vascular or cardiac disturbances, retinitis, edema, or epigastric pain indicates a post-renal origin, an involvement of the urinary tract. In some of these cases, the albumin disappears spontaneously or clears up under urinary antiseptics; in others the turbid urine persists until after delivery.

The amount of albumin is dependent in a large measure upon its origin, that of the kidney being usually greater than that of the urinary tract. Generally speaking, the gravity of the condition increases with the output of albumin, but this is by no means a fixed rule. The seriousness of the disease is determined by the presence of the clinical symptoms and the nature of the excretory quotient.

Whether an albuminuria is casual or habitual is readily ascertained by examining each specimen of urine separately and on successive days.

The existence of a physiologic albuminuria is a subject that has been productive of much discussion. Wright would consider certain types of albuminuria as no more endangering life than urticaria. On the other hand, Oswald, Hauser, Elliott and others regard such conditions as a sign of transitory injury to the renal filter. In these cases the albumin may be discovered only by accident and the after life of the patient may be unaffected by its presence; in other instances, apparently similar, the albumin found by chance proves to be the first sign of an insidiously developing nephritis.

If this uncertainty exists in considering the functional albuminuria of the non-pregnant, it is apparent that in pregnancy, a condition in which an extra-strain fall upon the kidneys, physiological albuminuria should put the physician on the alert for latent or developing renal disease.

Williams would regard a slight amount of albumin with indifference, provided the urea output was normal. Hall observes that albumin and casts occur in a large per cent of pregnant women and signify the kidney of pregnancy, the most of which return to an apparently normal condition after labor, but the presence of the pregnancy indicates a danger of eclampsia, and eclampsia never develops except in these cases.

On the other hand, Siedeberg considers albuminuria a serious indication likely to be a forerunner of some complication during labor. DeLee states that in his experience, "When a woman develops albuminuria, discovered by the ordinary tests, there has always been a pathologic foundation for it."

For diagnostic purposes the albuminurias of pregnancy may be divided into three groups:

1. The toxic,—nephritic or pre-eclamptic, usually accompanied by headache, edema, ocular disturbances, or epigastric pain. In the absence of a definite past history in regard to a nephritis antedating pregnancy, it may be impossible to distinguish between nephritic and pre-eclamptic toxemia. Differentiation is unimportant clinically since the treatment of both types is identical.

2. The infectious or "Albuminuria of Suppuration" of Wallich, characterized by polyuria, turbid or purulent urine, with or without disturbances of micturation, no edema, eye symptoms, cardio-vascular changes or epigastric pain. According to Wallich some of these cases clear up under urinary antiseptics; in the vast majority of such instances no permanent injury to the urinary system ensues.

3. Mechanical,—due to pressure of the gravid uterus and consequent congestion of the kidney or to hyperlordosis described by Jehle and found by Jaeger in 25 per cent of his cases.

It is evident that in a number of cases of albuminuria during pregnancy, it will be impossible to clearly distinguish between the various types. Where the vagina, bladder, ureter and pelvis of the kidney may be excluded as a source of albumin in the urine, its presence should be considered as proof of some abnormality of the kidney as to the health of its epithelium, or its blood pressure, or both. If the amount of albumin is small and the nitrogen elimination normal or not greatly reduced, the condition may be regarded as pathologic rather than of clinical significance, but the physician should ever be on the watch for the earliest symptoms of beginning nephritis or toxemia.

The Significance of Melituria.—On the discovery of carbohydraturia in the pregnant woman, it is necessary to consider two forms of sugar, namely, lactose and glucose.

In 1877 Hofmeister definitely established the

presence of lactose in the urine of pregnant women. It is usually observed in the last few weeks of pregnancy. Williams, however, noted it as early as the seventh month. Lactose indicates premature activity of the mammary glands and has no clinical importance, except the possibility of being mistaken for glycosuria and erroneously forming the basis for a somber prognosis.

Lanz, Von Jaksch, Reichenstein, and others, have demonstrated that during pregnancy the power for assimilation of sugar is markedly reduced. Novak, Porges and Strisower would attribute the predisposition to glycosuria of the pregnant woman to a hepatogenous and a nephrogenous cause. They observe in the first instance, that anatomically, the liver shows fatty degeneration, while physiologically, as tested by levulose, it is insufficient. They have also examined the blood of certain cases of glycosuria complicating pregnancy and have failed to record a corresponding hyperglycemia. In such cases, these observers believe they are dealing with kidneys that possess abnormal power of filtration, a condition peculiar to pregnancy.

According to Reichenstein, the ovaries in pregnancy exercise an influence upon the glands regulating carbohydrate metabolism, namely, the liver, pancreas, thyroid, and adrenals and thereby produce glycosuria.

Henkel believes that glycosuria is produced by the influence of the rapidly growing uterus upon the genital apparatus. To support his view he observes that a tumor of the female genital system may cause a diabetes that will disappear after removal of the neoplasm.

Various authors ascribe the condition to some functional change in the thyroid or hypophysis or both, to a nervous predisposition, etc.

Although interesting, it is obvious that these theories do not completely explain the metabolism underlying either transient or alimentary glycosuria.

Alimentary glycosuria is of great significance, since it is essential to differentiate it from the glycosuria of diabetes. We may consider this form present when the urine becomes aglycosuric on removal of the sugar from the diet without reducing the other forms of carbohydrate below the normal intake.

Melituria during pregnancy, in the absence of clinical symptoms, should by no means be interpreted as a sign of diabetes until lactosuria, alimentary, and transient glycosuria have been excluded as far as it is possible to do so, as the chances are much in favor of the disease not being present. It is relatively uncommon in women and when occurring, tends to begin after the climacteric. On the other hand, the diabetic woman is unlikely to become pregnant for the disease frequently decreases or destroys the libido sexualis and so disturbs the structure and function of the internal genitalia as to make conception improbable.

Unfortunately, in a small per cent. of cases conception may be superimposed on diabetes or diabetes may occur during pregnancy.

Therefore, in the absence of characteristic clinical symptoms, a determination of the nature of the sugar in the urine is of the utmost importance.

For practical purposes, lactose may be distinguished from glucose by being non-fermentable. More nearly accurate information may be obtained by isolating the substance in crystalline form.

Lactose and glucose may occur in the same urine and should be suspected when there is a well marked difference between the titration reading, and that of the saccharimeter or between the polarimeter and the saccharimeter.

When glucose is detected the problem is more complicated, since between the mildest glycosuria and the most grave diabetes, all gradations occur. It is necessary to distinguish between alimentary and transient glycosuria and true diabetes.

We may consider alimentary glycosuria to be present when the symptoms are negative, the amount of sugar small, and the urine becomes free from glucose on removal of sugar from the diet. This form of glycosuria has no clinical importance.

Inquiry into the past history of the patient may clarify the diagnosis by revealing glycosuria antedating pregnancy.

In absence of symptoms, it is impossible to determine whether a given case is diabetes or will clear up under treatment. The seriousness of the condition, however, may be relatively determined by the amount of sugar excreted and the period of pregnancy in which it occurs. A large

amount of glucose appearing in the urine early in pregnancy even in the absence of symptoms should be suspicious of diabetes and of grave import. In any event, where glycosuria is present and it does not appear to be alimentary, careful and frequent observation of the patient is imperative.

Urea and Ammonia.—On account of nitrogen retention due largely to fetal growth, the amount of urea excreted by the pregnant woman is less than that of the non-pregnant and in the last month of gestation may reach 70.8-76.6 per cent.

Low urea elimination is not regarded with equal significance by all observers. The majority, however, are agreed that marked diminution in the quantity of urea is a serious sign and indicates the institution of prophylactic treatment.

The amount of ammonia-nitrogen excreted during normal pregnancy is from 4-6 per cent. The absolute ammonia output remains approximately the same from day to day, the relative output will vary with the changes in the total nitrogen metabolism.

Murlin and Bailey have found the ammonia nitrogen in normal pregnancies, in which the retention of nitrogen is large and the total nitrogen excreted correspondingly small, may be as high as 12 per cent of the total and unaccompanied by any unfavorable symptoms. They have noticed that immediately following severe catharsis, because of reduced absorption of nitrogenous food and consequently decreased excretion of total nitrogen, the ammonia nitrogen may reach 17 per cent. These authors wittingly ask, "How many of the so-called high ammonias which have been thought sufficiently grave to indicate emptying the uterus have been obtained after catharsis?"

It has further been shown that some supposed instances of high ammonia output have been caused by vesical contamination whereby ammonia arose in the urine as a result of bacterial changes. In such cases irrigation of the bladder with a saturated solution of boric acid produced prompt reduction in the ammonia nitrogen, the food intake and total nitrogen remaining unchanged.

The total nitrogen is dependent on the amount of food ingested, the nitrogen retention, etc. An increased percentage of ammonia nitrogen may, therefore, be due to the amount of food eaten or the protein stored.

It is obvious that no great emphasis can be placed upon percentage values of urea or ammonia alone in determining a radical course of clinical procedure, but we should be guided by the symptoms, as well as the urinalysis, in deciding upon such action.

Urinary Sediment.—The importance of the microscopic examination of the urinary sediment of the pregnant woman can hardly be over-estimated.

Modern methods of centrifugation and the examination of the urine shortly after it is passed greatly increase the likelihood of finding cells and casts. The discovery of occasional hyaline or stippled casts should not be considered with grave apprehension. A small number of epithelia may be regarded as a normal constituent of the urine.

The presence of many casts and renal cells or cells from the deeper layers of the mucosa of the urinary tract point to disease of the kidney or urinary passages more clearly than does albuminuria. In catheterized specimens, hematuria or pyuria is proof of hemorrhage or infection of renal or post-renal origin. When either is associated with cylindruria differentiation is not difficult.

The microscopical findings are, as a whole, more dependable and more readily interpreted than the positive chemical tests.

CONCLUSIONS

1. In pregnancy, so-called physiologic albuminuria should be regarded as indicative of renal abnormality and the patient watched accordingly.
2. Recognition and differentiation of the different types of albuminuria are imperative, in order that the members of the toxic group may be discovered early, their gravity appreciated, and proper treatment instituted.
3. The infectious and mechanical types should be carefully observed to detect developing nephritis and to avoid any increased irritation of the renal epithelium.
4. Melituria during pregnancy, in the absence of clinical symptoms, should by no means be interpreted as a sign of diabetes until lactosuria, alimentary and transient glycosuria have been excluded.

5. In the absence of symptoms it may be impossible to determine whether a given case of glycosuria will or will not clear up under treatment. When glycosuria is present and it does not appear to be alimentary, careful and repeated observation of the patient is absolutely necessary.

6. Very low urea output is a danger signal and the patient should be kept under close supervision.

7. High ammonia may be due to increased total nitrogen eliminated, following nitrogen retention, inanition, catharsis, etc., or it may also result from bacterial contamination of the bladder, and be unaccompanied by any unfavorable symptoms.

8. No great emphasis should be placed on percentage values in determining a radical course of clinical procedure, but we should be guided by the symptoms, as well as, the urinary findings.

9. Analysis of the urine is a means of great value in separating the safe from the hazardous cases, and while it may not tell when to empty the uterus, it should lead to the use of such diet, hygiene, and medication that intervention in many cases would be unnecessary and many children would be born that otherwise would have been doomed.

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VERSION AND BREECH PRESENTATIONS.*

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Mr. President and Gentlemen of the Society: The subject which you have asked me to write on, "Version and Breech Presentations," is inded a popular one in obstetrics—one which would require a great deal of practical experience to add anything new. I will omit histories and theories and will present the practical procedures as they are in use at the Chicago Lying-in Hospital.

Version.—Version may be defined as turning the fetus in utero, to bring about a more desirable presentation for delivery.

The operation is known as cephalic version, when the head is made the presenting part, and pelvic, breech or podalic version, when the latter is made to present.

This change in presentation may be accomplished by manipulations through the abdominal wall, and the procedure is spoken of as external version. When a hand is inserted into the uterine cavity to alter presentation, the act is known as internal version.

Changing the fetal polarity by a series of movements with the fingers of one hand in the cervix, and the other hand on the abdominal wall, is termed combined version, bipolar or Braxton Hicks'.

For the sake of completeness, version may be discussed at great length, but version as practiced today invariably implies podalic version. An absolute knowledge of each respective case is essential before attempting the operation. The cervix must be sufficiently dilated, yet not all liquor amnii must have escaped. How much and how long has the lower uterine segment been subjected to stretching? is a very important question.

In measuring the pelvis it is not alone a question of size of the conjugata vera, but of the size of the fetal head as well.

Are there any pelvic tumors? Is the fetus a

*Read before the Aux Plaines Branch, Nov. 28.

monstrosity? Is it alive? Is the presenting part engaged? And to what extent? All are important questions, demanding due consideration whenever version is indicated.

External Cephalic Version.—This procedure finds its usefulness during the last few weeks of pregnancy and the beginning of labor in transverse and breech presentations. A lax abdominal wall is necessary in order to carry out the operation successfully. The technique is as follows: The patient is placed on her back in a position to relax the abdominal muscles; the bladder and lower bowel should be empty. The abdomen is bared and the position of the fetus mapped out. The fetal poles are then seized with either hand, the head stroked toward the pelvis, and the breech moved gently in the opposite direction. During pregnancy the new position must be maintained with a binder and properly fitting pads; at the beginning of labor the head may be held in position manually until engagement occurs.

Internal Cephalic Version.—In the strict sense of the term this operation does not exist and is rarely performed, with one exception, viz., in shoulder presentation. The patient is deeply anesthetized, the shoulder grasped by one hand is pushed up and the other hand assisting through the abdominal wall, until the head descends into the pelvis.

External Podalic Version.—The procedure is deserving of name only as employed in deflected breech presentation, when by manipulations of both hands the breech is guided into the superior strait.

Internal Podalic Version.—This operation requires introduction of a hand or arm into the uterine cavity, seizing one or both feet of the fetus, and is invariably followed by extraction. It is employed in any emergency on the part of the mother or the fetus requiring hasty delivery; in eclampsia, severe hemorrhage, rupture of the uterus, and premature separation of placenta. Also in transverse and oblique presentations, and in prolapse of the extremities or the cord. The patient must be under the anesthetic, the cervix sufficiently dilated, and the presenting part not deeply engaged.

Combined or Bipolar Version.—This method is nearly always done on the breech. It has its greatest usefulness in placenta previa, and is often named after Braxton Hicks'. The technique is as follows: The patient is placed in the lithotomy position.

The cervix must be dilated artificially if required, sufficiently to admit one or two fingers, the presenting part is pushed upward, while the other hand operates through the abdominal wall on the opposite fetal pole, and gradually brings the breech down towards the external os by pushing and finally raising the head. When rotation is complete the membranes are ruptured, one foot is seized and drawn through the cervix.

Prognosis.—The outcome of version depends on the judgment and skill of the operator. The danger to the mother is rupture of the uterus and death. The fetus may likewise die either of premature separation of the placenta or compression of the cord. Fractures, dislocations and separation of epiphyses may occur; nerve injuries and paralysis are not unheard of.

At the Chicago Lying-In Hospital, where an accurate record is kept of every case, in 2431 consecutive labors version was performed 19 times. In each instance it was on the breech. The indications were as follows:

Five transverse presentations.

Five contracted pelves.

Four placentae previae.

Two instances of poor fetal heart tones.

Low forceps were applied three times on the aftercoming head.

Craniotomy was performed three times.

Of these 19 cases five babies succumbed, marking a mortality of 26 per cent.

Breech or Pelvic Presentations.—When at the time of labor the pelvis is advancing, it is designated breech presentation.

The sacrum has been chosen as the denominator, and it may, at the beginning of labor, occupy one of the four quadrants of the pelvis or be directed transversely, anterior or posterior; hence, we have six positions, of which S. L. A. is the most frequent.

According as to whether the lower extremities of the child are flexed or extended, we speak of frank or complete breech, and foot or knee presentation.

Breech presentations have been classed as anomalies; they border on the abnormal, indeed they are at times pathologic, whence they are

attended with fetal mortality and risk to the mother.

Frequency.—In reviewing 2431 labor records of the Chicago Lying-In Hospital, the breech was found presenting 77 times, including premature births; making a little more than 3 per cent. In order of frequency the positions were as follows: S. L. A.; S. R. A.; S. R. P.; S. L. P.

Etiology.—In the series of cases examined breech presentations were found to be associated six times with premature birth; two times with placentae previae; two times with hydramnios, five twins and three macerated fetuses. No mention was made of the displaced pregnant uteri and laxity of the abdominal wall.

Diagnosis.—The diagnosis is readily made. By external examination a soft, yielding, irregular mass is found over the inlet, and a firm, round, movable body occupies the fundus.

Vaginal examination finds the pelvis empty, and when labor has begun the characteristic parts of the breech are distinguished.

Mechanism.—In a large number of cases the progress in S. L. A. occurs during labor as follows: Engagement takes place in the left oblique, the cervix dilates, the membranes rupture, and descent occurs late and slowly. Lateroflexion of the body begins, the anterior hip reaches the pelvic floor and rotates to the left under the symphysis, performing internal anterior rotation.

Lateroflexion continues and becomes more marked; the anterior hip slips under the pubis, the posterior hip glides over the perineum, and the pelvis and extremities are born, rising from under the pubic arch.

External rotation may now take place, i. e., the anterior hip turns again to the right. The lower extremities fall limp, the body advances, with the arms closely folded against the chest, in the left oblique, until the shoulders are reached, whence the anterior one rotates to the symphysis and slips behind it; the posterior shoulder and arm are then born and the anterior follows: The head descends flexed in the right oblique, the occiput rotates to the symphysis, the chin, mouth, nose and the forehead appear in succession over the perineum, and the head is born.

Variations in Mechanism.—The breech may be delayed at the pelvic inlet. Delay or arrest of the breech may occur in the pelvis. The arms may be displaced and contraction of the cervix may occur. Flexion may be undone and the head may become impacted, or it may rotate into the hollow of the sacrum.

Prognosis.—The mother runs always risks of deep tears; post-partum hemorrhage and infection are not infrequent. The fetal mortality is high, death being caused by asphyxia, and injuries are frequent. Of the 77 cases examined, 12 babies died before or during delivery, a mortality of 15 per cent. The child had to be extracted 12 times. Forceps were used twice on the after-coming head. There was one fractured humerus. Episiotomy was performed eight times.

Treatment.—In view of the doubtful outcome, breech presentations should be corrected before labor. Every breech during labor requires watchful expectancy, being ready for all emergencies of operative delivery. The patient is best delivered on the table. As the breech emerges, no traction is made; the extremities are straightened and wrapped in a warm towel. When the baby is large or the perineum rigid, deep episiotomy is performed. When the navel appears, the time becomes limited according as to conditions present. The fundus is followed down with the hollow of the hand. If the shoulders do not deliver readily, the posterior shoulder and arm are aided, then the anterior.

After the shoulders are born the body is raised to deliver the head in the most natural manner. Every method for resuscitation should be in readiness.

Treatment of Complications.—When extraction becomes necessary in serious conditions of the mother or child, complete dilatation and a normal pelvis are requisite.

The patient is placed on the table and anesthetized; the feet are seized and brought into the vagina if not already down.

In frank breech the fingers are hooked in the groin. Traction is then made in the direction of the pelvic outlet, and as the extremities are born they are wrapped in a warm towel. Both hands seize either limb higher up and continue traction until the breech and body emerge. The shoulders are delivered as in normal mechanism, freeing first the posterior, then the anterior

shoulder. It is very important to exert pressure through the fundus all this time.

The head is delivered according to Mauriceau's or Smellei-Veit method. In making traction it is important to maintain flexion of the head and back anteriorly.

When the occiput is posterior and rotation cannot be effected, two fingers of one hand grasp the shoulders, while the other hand draws the feet over the abdomen of the mother. There is great risk of a deep tear.

When the head is impacted in the bony pelvis, forceps may be employed.

The cervix and contraction ring may retract firmly on the neck; immediate delivery is indicated. The patient is deeply anesthetized, traction is made, assisted by suprapubic pressure.

When the arms are extended over the head, two fingers are introduced beneath the posterior shoulder, passed along the humerus to the elbow, hooked over the arm and used as a splint in bringing the latter down along the thorax. The body is then seized and rotated so as to bring the anterior shoulder posteriorly, and the arm delivered in the same manner.

If the breech or the head are delayed at the pelvic inlet Kristeller's manipulation should be employed.

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DISORDERS OF THE CARDIAC MECHANISM; THEIR MODERN INTERPRETATION.*

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It is well known that during recent years some very important work has been done in the investigation of the mechanism of the heart-beat and in the interpretation of certain disorders of this mechanism. Much of our newly-acquired information concerning this subject has been gathered through the use of precise graphic methods. The sphygmograph, the polygraph, the micrograph and the electrocardiograph are the instruments that have been used in the development of much of our modern cardiac terminology.

Speaking of the service those instruments have rendered to medicine, Dr. Lewis says: "They have placed the entire question of irregular or disordered mechanism of the human heart upon a rational basis, so giving to the physician the confidence of real knowledge; they have profoundly influenced and have added exactitude to prognosis; they have potentially abolished the promiscuous exhibition of cardiac poisons, and have clearly shown the lines which their administration should follow."

The new clinical observations, he further says, have stimulated and directed a host of laboratory researches, anatomical, physiological, pathological and pharmacological of the most valuable nature.

The records in themselves constitute the most exact signs of cardiac affections which we possess. The little strips of paper imprinted by the disease itself form permanent and unquestionable testimony of events that have occurred in the cardiac revolution, and may be placed in the balance, as Lewis says, without disquietude, while experiences of a more subjective kind fill the opposing scale.

In the arrythmias, for example, the tracings of this little instrument have led to an entirely new classification. It would be literally correct to say that they had made such a classification possible. There certainly was no such classification when most of you and I first studied physical diagnosis. It is quite interesting in this connection to look up the older works on practice and physical diagnosis, and, indeed, some of the newer ones, which say very little about the subject, notwithstanding the fact that Mackenzie declares that the advance that has been made in the knowledge of this subject, i. e., the arrythmias, within recent years, positively constitutes a revolution. By the combined efforts of clinicians and experimental physiologists, he goes on to say, what was recently a complete mystery is now one of the best understood matters in the whole science of medicine.

Until the publication in 1902 of Mackenzie's celebrated work on the pulse, the almost inestimable value of the sphygmograph in the interpretation of the various cardiac irregularities was not appreciated. This really remarkable book, however, the product, by the way, of a hard-worked general practitioner, who tells us that rarely during its preparation could he devote more than one consecutive hour to the work, gave

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a tremendous impetus to the study of the cardiac mechanism in all its bearings.

And, as it is chiefly in the interpretation of the abnormal conditions of the mechanism of the human heart, as seen in the various arrythmias, that the value of the sphygmograph has been demonstrated, I shall endeavor to give a brief review of one or two of the more interesting of them, but before doing so I will call your attention for a moment to a few of the more important points in the development and innervation of the organ which should be emphasized because of their important bearing upon the clinical investigation of heart disease. Let me, then, call to your recollection the following facts in embryology:

In early embryonic life the heart is shaped like a tube, at the posterior end of which the large veins from the body unite to form the so-called sinus venosus.

Later the tube assumes a "U" shape and pouches develop therefrom to become the auricles and ventricles of the organ, the tube still persisting and connecting the various chambers.

In the human heart at a later stage the sinus venosus loses its distinctive features and becomes fused more or less intimately with the tissues of the auricle around the mouths of the great veins and a strip of tissue between the orifices of these vessels and the coronary sinus.

By this time the original cardiac tube has also disappeared as such, but persists in the form of a band of peculiar fibers connecting auricles and ventricles, and now known as the auriculo-ventricular band, Gaskel's bridge or His' bundle.

The most useful description of this bundle was given by Tawara in 1906, when he published his researches into its origin, structure and distribution. He pointed out that it rose from a node of tissue—Tawara's node—in the right auricular wall, near the opening of the coronary sinus, and was distributed by a band of tissue on either side of the ventricular septum to the papillary muscles by numerous fine branches—long ago described by Purkinge. This band of tissue, then, represents the original cardiac tube, and a small node of tissue, the sino-auricular node at the mouth of the superior vena cava, and lately discovered by Keith and Flack, is believed to represent a part at least of the sinus venosus, and to be the point at which normal auricular contractions originate, and hence is known as the heart's pacemaker. In brief, then, cardiac stimulus production and conduction seem at present to be the peculiar function of the remains of the primary cardiac tube.

In the normally-acting adult heart this pacemaker sends forth waves of contraction that average seventy-two per minute, and the contractions being evenly spaced, the systoles follow each other in a regular order or rhythm. If the His bundle be compressed, however, conduction is interfered with, while if it be divided the harmonious contraction of auricle and ventricle is destroyed the auricle continuing to contract at the normal rate, but the ventricle at a rate quite independent of the auricle. And, as we shall see later on, conditions exactly analogous are met with as the result of disease in man, particularly in the later stages of rheumatic heart affections, syphilis and cardiosclerosis.

Of the nerve supply of the heart it will suffice for the present to say that though the independent functions of the muscle fibres enable the heart to execute its movements independent of any nerve intervention, yet the nerves exercise a powerful controlling influence over these movements.

It would be idle to attempt a discussion of the relative merits of the neurogenic as opposed to the myogenic theory of cardiac stimulus production, because we possess little or no real knowledge of the function of the so-called intrinsic cardiac ganglia or of the sympathetic nerve trunks.

Of the function of the vagus in its relation to the heart, however, we have a limited but real knowledge. We know, for example, that if one vagus be divided, little effect may be noticeable. If both vagi be cut, however, the result is a greatly increased frequency in the heart's action. If the vagi be stimulated, the results are somewhat varied, depending to some extent upon the strength of the stimulation, but may be said in a general way to depress the function of the muscle fibres, while if the stimulation be strong enough, the conductivity of the fibres joining auricles and ventricles is so depressed that ventricular contraction may fail to follow auricular contraction and skipped beats will result.

Mackenzie points out that a principle of great importance in diagnosis and treatment underlies this seemingly uncertain action of the vagus, and

that is, that if there be depression of one function of the heart—whether its conductivity, contractility or what not—vagus stimulation is liable to seize upon that function and increase the depression. I had quite recently under my care a case that illustrated this principle rather forcibly, but I will refer to it later in connection with heart-block.

In 1882 Gaskel demonstrated that the heart muscle possessed five fundamental, physiologic properties, and it has now been pretty generally accepted that the various arrythmias may be satisfactorily classified in reference to one or other of these attributes.

These five cardiac functions, as is well known, are:

1. Rhythmical stimulus production, i. e., the power to produce, rhythmically, a stimulus which can excite the heart to contraction.
2. Excitability or irritability, the faculty of receiving and responding to a stimulus.
3. Conductivity, the power to convey a stimulus from fibre to fibre.
4. Contractility, the power to respond to a stimulus for contraction.
5. Tonicity, the power to maintain cardiac tone, shown in the fibres not relaxing to their full length during diastole.

To these five functions Dr. Ellis Kirk Kerr of this city recently called attention to what some believe to be another distinct property of heart muscle, viz., that when the heart contracts, it does so to its fullest extent and immediately thereafter enters upon a refractory stage, during which it will respond to no stimulus, however strong. This so-called refractory stage, however, has been regarded by others as an expression of the temporary exhaustion of excitability.

Time will not permit consideration of each of the arrythmias. I will, therefore, simply name them and proceed to a discussion of one or two of the more interesting of them.

1. Sinus arrythmia.
2. Heart-block.
3. Premature contraction (extra systole).
4. Auricular fibrillation (nodal rhythm, *pulsus irregularis perpetuus*).
5. Alternation of the pulse.
6. Paroxysmal tachycardia.

Sinus Irregularity: This form of irregularity is characterized by a waxing and waning in the rate of the heart-beat, the contractions being more frequent during inspiration and less frequent during expiration. It has also been called pneumogastric irregularity because of the belief that it is due to vagal stimulation of the sino-auricular node or pacemaker, the vagus in turn being acted upon by the respiration.

While these vagal irregularities usually show a respiratory relation, there are times when no such relation can be made out, especially when the heart is under the influence of digitalis and the irregularity due in all probability to alterations in vagal tone from that cause.

A sinus irregularity can usually be recognized without much difficulty, the sphygmograph being employed chiefly to give permanent expression to the condition. The gradual waxing and waning of rate synchronous with the respiratory curve is always suspicious, if not conclusive.

It is of very frequent occurrence in childhood, and hence has been spoken of as the "youthful type" of irregularity, and where absent may readily in many cases be elicited by requiring the child to breathe deeply.

This form of irregularity in children has been stated to be symptomatic of tubercular meningitis, to which it has no pathologic relation whatever.

While sinus irregularity is most frequently met with in children, it is by no means confined to the first decade of life, but may not infrequently be encountered in adults. I quite recently examined a robust, healthy man, aged twenty-eight, with a very well-marked case of sinus irregularity, and within a few days have seen a young man, aged seventeen, with a pronounced case of it, especially on deep breathing, and who was advised by his physician to refrain from playing football last season on account of it.

Friberger recently (*Jour. A. M. A.*, 1912, lviii., 828) undertook to examine the hearts of 321 unselected children between the ages of five and fourteen, taking graphic records of each child. Only about 37 per cent. had regular pulses. Of the remainder about 12 per cent. had great irregularity and about 50 per cent. a moderate amount. The variety was this so-called "youthful type" and was about equally common in both sexes. The etiology was not clearly apparent, but Friberger noted that children suffering from tu-

berculosis frequently gave a tracing of sinus irregularity.

The importance of this condition lies chiefly in its possible confusion with other forms of irregularity.

It calls for no therapeutic measures. Indeed, Mackenzie states that he has not yet found it in any case of serious affection of the heart muscle, and is of the opinion that the vagus only exercises this control when the heart muscle is in a healthy condition.

This neuro-genic irregularity, as Hirschfelder calls it, is of extra-cardial origin, then, and due to reflex interference with the rhythmicity of the organ by more or less rhythmic reflex stimuli passing through the vagi and accelerators.

Heart-block is a disorder of the cardiac mechanism characterized clinically by so-called dropped beats or intermissions, or by a delay in or absence of response of the ventricle to auricular impulses.

As we have already seen, the stimulus for cardiac contraction has its origin, under normal circumstances, in the sino-auricular node, whence it spreads rapidly over both auricles and is transmitted from auricles to ventricles by the neuromuscular band already described as the His or auriculo-ventricular bundle. If this bundle be damaged from any cause, the transmission of the stimulus from auricle to ventricle is interfered with, so that there may occur a delay in the contraction of the ventrical, or if the injury to the bundle be greater, the stimulus from auricle to ventricle may fail to get through and dropped beats or ventricular intermissions will result. This skipping of beats may occur only at rare intervals, or the ventricle may be found to respond to only one-half of the auricular impulses, when we have what is known as a two-to-one heart-block; 3:1 and 4:1 ratios, in which each third and fourth auricular impulse alone yields a ventricular response, are sometimes met with, but not very frequently. All grades of intermission, then, from the occasional skip up to the point where only an occasional auricular impulse finds a ventricular response are included under the terms "partial heart-block." In the complete variety of heart-block, that is, the final grade, no auricular impulse whatever gets through to the ventricle on account of the destruction or disorganization of the bundle of His. When this is the case, the ventricle having completely lost the controlling influence of the auricle beats in response to a slow and regular series of impulses generated within itself, i. e., within the uninjured remains of the ventricular distribution of the auriculo-ventricular bundle. In complete heart-block or dissociation two distinct rhythms are, therefore, maintained—the auricular rhythm and the ventricular rhythm—the auricle continuing to contract about 72 times per minute, while the ventricle beats about 30 times per minute, the systoles of auricle and ventricle falling with varying time-relations to each other.

Apart from the use of the sphygmograph, the correct clinical interpretation of these various grades of heart-block is surrounded by a great deal of difficulty, as the ordinary clinical evidence is limited to the fact that the ventricular rate is slow, while the pulsation of the veins in the neck seems to indicate that the auricle is contracting with normal frequency. It is true that if the ventricular rate be below 30 per minute, one may be reasonably sure that complete heart-block exists, but if the rate be anywhere between 36 and 72, the difficulty of correct interpretation, apart from graphic records, is, to say the least, very great, because this grade of slowing may be due to other causes than heart-block.

In cases where there is a mere delay in the response of the ventricle to auricular impulses which would, of course, be occasioned by a loss of conductivity in the A. V. bundle, the evidence apart from a tracing is not satisfactory. We all see cases of this kind not infrequently, where upon putting our ear to the chest we can recognize that ventricular contraction is delayed beyond the point of its normal time relation to the complete cardiac cycle. In other words, the first sound of the heart lags in the cardiac revolution. This naturally gives rise to some measure of irregularity which, by the way, is very far from being covered by the time-honored diagnosis of "functional trouble" or even by the more modern "cardiac neurosis." As a matter of fact, this halting rhythm is not infrequently the initial expression of a widespread involvement of the myocardium, and with a combined jugular and carotid tracing before us, a diagnosis becomes comparatively a simple matter. There is one condition, however, that will assist the unaided ear or stethoscope, in the absence of a tracing, in

making a diagnosis in a case of beginning heart-block—that is, in cases where mitral stenosis is present. In these cases an appreciable interval can be recognized between the end of the presystolic thrill and the following ventricular contraction, which affords at least some evidence of delay in the transmission of the stimulus for contraction between auricle and ventricle, because, usually, as you know, the presystolic thrill in mitral stenosis ends in ventricular contraction. Cabot gravely questions whether this interval can be recognized, but whether or not, if a tracing of the jugular pulse be taken simultaneously with that of the radial pulse or apex beat, very little difficulty, as a rule, will be experienced in determining the true character of the disorder. On the jugular tracing the contraction of the auricle is shown by a distinct wave which, under normal conditions, is followed at an interval of about one-fifth of a second by the upstroke on the carotid tracing and a very little later by a similar wave on the radial tracing. Indeed, on the jugular tracing alone both an "A" wave and a "C" wave occur—the "A" wave due to auricular contraction and the "C" wave to carotid expansion —the latter vessel being in close relation to the jugular at this point. This A-C interval, as it is called, that is, the interval between the beginning of auricular and the beginning of ventricular contraction is of very great importance in estimating the conductivity of the His bundle, over which the stimulus for contraction must pass from auricle to ventricle, and it is only by graphic methods that the exact time-relations of the various movements of the organ can be satisfactorily determined. It would, therefore, seem imperative, even from this utterly inadequate and incomplete presentation, to conclude that the polygraph has a very important function to perform in determining the true condition of the cardiac mechanism in all cases simulating heart-block.

Reference has already been made to rheumatism and syphilis as causative agents in the production of heart-block, though it is now known to follow other of the acute infections, such as diphtheria, influenza, pneumonia and typhoid. But, whatever be its origin, heart-block, especially the higher grades, is now generally recognized as an expression of a more or less widespread involvement of the heart muscle, and not confined to the tissues immediately surrounding the neuro-muscular elements concerned with the production and conduction of impulses for contraction. It may not be without interest to note in passing that the lower grades of heart-block may very readily be converted, temporarily at least, into the higher grades by the administration of certain drugs, especially those of the digitalis group. This point may be illustrated by referring again to the case I spoke of earlier in the evening in connection with Dr. Mackenzie's observation, that if there be depression of one function of the heart, vagus stimulation is liable to seize upon that function and increase the depression. A woman, aged 68 years, with an intermittent heart (1 in every 7 or 8 beats) comes down with pneumonia. Reasonable doses of digitalis are administered three times daily, and in 48 hours, but especially in 72 hours, her low grade heart-block is converted into a regular 2:1 heart-block, which improved only after the temporary, but complete withdrawal of the drug. The function of conductivity in this woman's heart was already depressed, as is shown by the occasional intermission. The vagi, stimulated by the digitalis, seized upon this function and increased the depression, or in other words, raised the grade of the heart-block. True, this condition might have been to some extent counteracted by the administration of atrophin, but it was not used.

The special symptomatology of heart-block may be summarized in a few words, as, apart from the characteristic irregularity and slow ventricular rhythm with its associated Adams-Stokes' syndrome there are no particular characteristics. (Adams-Stokes' syndrome, by the way, is not a synonym of heart-block. The latter condition is not infrequently present without any syncopal symptoms manifesting themselves. It is, naturally, in the higher grades of heart-block, and especially in dissociation of auricle and ventricle, with its associated slow pulse (25 or 30 per minute), that the cerebral circulation is so poorly supplied as to precipitate the epileptiform convulsions known as the Adams-Stokes' syndrome.)

But to refer again to the symptomatology; the general field of cardiac response is distinctly limited, and the manner of limitation is varied, in some it is a sense of general weakness, in others, very slight exertion induces attacks of

dyspnea, and so on. It must always be remembered, however, that in established heart-block, not only the neuro-muscular tissue concerned with the production and conduction of impulses is involved, but, *pari passu* with its disorganization the invasion of the myocardium seems to proceed.

From a prognostic point of view heart-block cannot of itself be said to be fatal. Though, at the same time, it is true that the most of those who suffer or have suffered from it die with the usual symptoms of general heart failure. The important question is: how does heart-block affect the prognosis in these cases. Lewis says, "my experience of such cases is that they are serious; in fact, most of those I have seen are dead, though they did not die of heart-block." It may be taken for granted, however, that the presence of heart-block, especially of the higher grades, adds greatly to the gravity of any case of valvular or myocardial involvement, and one's prognosis must be guarded.

The milder forms of heart-block require practically no treatment. The associated cardiac conditions, however, require attention quite frequently and digitalis may be indicated for the relief of dilation, dropsy or other symptoms. When this is the case the aggravation of the heart-block from the administration of digitalis must not be allowed to interfere with its being given, though it will, of course, suggest the advisability of getting along with as moderate doses as possible, and probably withdrawing it altogether for a day or two each week. In rheumatic patients the salicylates are, of course, in order, together with attention to the hygiene of the throat and mouth; while a history or a suspicion of syphilis calls for appropriate treatment. Mercury and the iodides are credited with having cured a number of cases of advanced heart-block. Those subject to the Adams-Stokes' syndrome should be warned of the danger of injury from falling in fits. In many cases these fits occur in groups and it is wise to have the patient lie up till such attacks cease. Digitalin, strophanthin, strychnin, oxygen, etc., have been used but with little if any result. Rest is, of course, all important in this as in all other varieties of heart disease.

Auricular Fibrillation. As we have already seen, the auricle is the seat of normal impulse production. In auricular fibrillation, however, these impulses instead of being given off at the sino-auricular node at an average rate of 72 per minute, arise at multiple, independent auricular foci in a most rapid and disorderly fashion. The usual co-ordinate contraction of the auricle is, therefore, lost and as a consequence the ventricle, in obedience to the rapid, irregular shower of impulses it receives, beats in a hurried and most disorderly manner. Not all the impulses generated in the turbulent upper chamber of the heart find responses in ventricular contraction or ventricular fibrillation which is incompatible with life would result. It is believed, however, that this very condition, ventricular fibrillation, is not infrequently responsible for sudden and unexpected deaths.

For twenty years, Mackenzie tells us he made this condition a subject of special study and found that 70 to 80 per cent. of all cases of really serious heart failure belonged to this class. What puzzled him most was the fact that as soon as the characteristic ventricular irregularity appeared, all evidence of auricular systole disappeared. He thought he had solved his problem, however, when upon making his first post-mortem in a case of this kind he found the auricles distended and thin-walled, and concluded that the auricles in those cases must be paralyzed. In his book on the pulse published in 1902 the condition was ascribed to paralysis of the auricle. At his next post-mortem, however, of a case of this kind he had watched for years, he found the auricular walls hypertrophied and reasoned, that, being hypertrophied they must have been functionally active. But as, in life, he was positive the auricle did not contract during ventricular diastole he concluded that auricle and ventricle must have contracted simultaneously, from a common impulse generated probably at the auriculo-ventricular node, and hence called the disorder "nodal rhythm," under which caption the condition is described in his "diseases of the heart," first published in 1908.

In 1905 Cushny suggested that this condition might be due to auricular fibrillation, or functional fragmentation of the auricle and though Mackenzie detected evidence of auricular fibrillation in some of his jugular tracings, he did not realize the significance of his tracings until Lewis in 1909 by means of his polygraph and electro-

cardiagraph showed the exact resemblance between this clinical condition in man and that produced experimentally in the lower animals. To Lewis is, therefore, due the credit of having by his physiologic researches, found the rational explanation of a serious condition that for years had baffled the best minds. Whether the percentage of auricular fibrillation in those admitted to a general hospital suffering from serious heart trouble be as high as Mackenzie puts it—70 to 80 per cent., or only 60 to 70 per cent, as Lewis says, the condition is certainly one of extreme gravity, and the importance of its early recognition cannot well be over-emphasized, as judicious early treatment frequently brings much comfort to the patient, though most of the cases sooner or later drift to a fatal termination accompanied by all the classical symptoms of heart failure.

The principal causes operative in the production of auricular fibrillation are rheumatism, and cardio-sclerosis in those of advancing years. No age is exempt though the incidence is heaviest between the ages of 20 and 40, men suffering much more frequently than women in those cases, curiously, where a history of rheumatism or chorea can not be established. In rheumatic cases the sexes are about equally divided.

The relative frequency of rheumatic fibrillation in women is closely associated with the prevalence of mitral disease in this sex—auricular fibrillation and mitral stenosis being frequently found together. Lewis gives statistics to show that 70 per cent. of his cases of fibrillation gave a rheumatic or choreic history, and the prevalence of fibrillation amongst those who suffer from mitral constriction is especially noteworthy—no fewer than 52 per cent. of his cases having this valve lesion. The one condition cannot, however, be said to be dependent upon the other, as they not infrequently occur independently, and the same may be said relative to myocardial degeneration, which is a prolific source of auricular fibrillation, yet the one frequently occurs in the absence of the other. Valve lesions, then, are frequent accompaniments of this condition, as may be determined by bed-side examination, but at the same time it is not an uncommon occurrence to find hypertrophy and dilation of the auricles as well as enlargement of the whole heart, as accompaniments of fibrillation even in the absence of valvular lesions which might be held accountable for them.

The degeneration most commonly present is that found by the microscope, and is in the form of a more or less intense sub-acute or chronic inflammatory change progressing to fibrosis, and accompanied by a leucocytic infiltration and atrophy of the neighboring muscle cells, but whether the presence of these histologic changes justify us in concluding that fibrillation is due to them seems open to doubt, as similar changes have been found in hearts where fibrillation never occurred and on the other hand, this disorder of mechanism has been present in hearts which, upon examination later, showed no such histologic changes. It is a legitimate conclusion, however, that the morbid changes present in the organ are the direct result of infections producing heart failure, though we may yet be ignorant of the reason why fibrillation occurs in one case and not in another.

While the symptoms complained of by patients with auricular fibrillation may be a sense of fluttering in the chest and neck and a consciousness of irregular heart action, the principal symptoms are those dependent upon the concomitant condition present; namely: a degenerate and failing heart though it is a fact that those affected with fibrillation usually suffer more acutely from shortness of breath, exhaustion and other symptoms of over-taxation of the heart muscle than do those with an equal degree of dilation or valve lesion in the absence of fibrillation, and this is no doubt due to the extra burden imposed by the disorderly action of the organ in this condition. It cannot, however, be said that any of the classical symptoms of heart failure, such as cyanosis, venous engorgement, dropsy or conspicuous dyspnea is the direct result of auricular fibrillation, for these are frequently present in cases where there is no fibrillation, and instances of fibrillation are not rare where these symptoms are not present. The two prime factors then, in the production of the symptoms in this condition are believed to be first, the widespread degeneration of the heart muscle, and second, the embarrassment caused by the extremely disorderly action of the organ.

In the clinical recognition of auricular fibrillation one gets more assistance from the nature of the ventricular action than from any other

source, except, of course, the polygraphic tracing which is positive. If the heart beats irregularly at 120 per minute or over, the irregularity is almost always of this nature, while if the irregularity be accompanied by signs and symptoms of serious heart failure the diagnosis is practically certain. If the heart is irregular, but not much accelerated and the signs of heart failure few or absent, a differential diagnosis may be made between fibrillation and some other form of irregularity by putting the patient through certain movements, as sitting up in bed a few times, when, with the cardiac acceleration due to the exercise it will be found that the irregularity is increased if due to fibrillation, while if due to extra-systole or partial heart-block, for example, the irregularity of the pulse will in all probabiity be temporarily abolished. As the pulse slows down the reverse is, of course, the case, the irregularity becoming less marked in fibrillation and more pronounced in the other conditions mentioned. Fever also by causing pulse acceleration acts in the same way.

The persistence of the irregularity due to auricular fibrillation is also deserving of notice, as in cases of this kind it is usually continuous from the time of observation till death, while the other irregularities are much less constant.

The virtual paralysis of the auricle in fibrillation is responsible for alterations in the adventitious sounds heard in those who have mitral stenosis with which it is so frequently associated. It has become customary to refer to the disappearance of a presystolic mitral murmur as almost pathognomonic of auricular fibrillation, but it is doubtful if this is an infallible or even a safe guide, because, while it is true that a short presystolic murmur disappears when fibrillation sets in, a longer, rougher murmur is preserved during fibrillation, though its time relations are somewhat altered. If the heart rate is rapid, as it usually is, the murmur can be heard during the entire diastolic period, while if the heart be slow, the murmur maintains its relation to the second sound, but vanishes at a verying interval from the succeeding first sound, so, we submit, it is rather misleading to say that presystolic mitral murmurs *always* disappear when fibrillation begins.

No one will be far astray, however, who bases his diagnosis of auricular fibrillation upon the following facts, viz:

1. *Disorderly* heart action, especially if accompanied by evidences of failure and acceleration.

2. Disappearance of a *brief, crescendo,* presystolic mitral murmur.

3. Disappearance of all signs of the auricular systolic wave in the polygraphic tracing of the jugular pulse, due, of course, to the virtual paralysis of the auricle, and the appearance of the so-called ventricular venous pulse, synchronous with the carotid, and due to the blood being forced back into the veins through the tricuspid orifice by the contraction of the right ventricle, there being no longer a compensatory dilating auricle interposed between the ventricle and the veins.

The severity of the other cardiac or secondary conditions present have much to do with prognosis in this condition, though fibrillation gives added significance to the case. As has been intimated, it is an evidence of very serious myocardial involvement and is a forerunner of temporary or permanent heart failure, few thus affected lasting more than ten years, and many dying earlier. By far the most important prognostic indication is the behavior of the heart under treatment. A patient with a persistent heart rate of 160 will not last many weeks, indeed, a heart rate of 120 is a serious omen unless it can be controlled and brought down to a point where the remaining energy of the organ will be conserved.

Fortunately, auricular fibrillation has been said to be the condition to which drugs of the digitalis group owe their well founded reputation. There is no other cardiac condition which responds so promptly or so satisfactorily to treatment as does fibrillation to rest and the judicious administration of digitalis. Where digitalis or one of its congeners fails to act, there is nothing more can be done, but it rarely fails, especially in younger patients where the causative agent has been rheumatism or chorea, and even in older patients, with advanced cardio-sclerosis, it brings at least much comfort from the distressing dyspnea and tumultuous heart action, though, of course, the condition remains with them to the end of the chapter.

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SPONDYLOTHERAPY IN EXOPHTHALMIC GOITRE.*

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A few words in explanation of the meaning and purport of spondylotherapy may not be amiss. This neologism was first employed by Dr. Albert Abrams from the Greek *spondylos,* vertebrae, and *therapeia,* treatment. This author and scientist has devoted many years and much study to investigating the spinal reflexes.

Spondylotherapy may be defined as the therapeutics of the reflexes. It is no more suggestive of an exclusive method of practice than electrotherapy or hydrotherapy, but merely suggests or emphasizes the importance of the spinal cord as the center for the discharge of the majority of reflex actions.

As no system can exclusively preempt the field of therapeutics, the author of Spondylotherapy advocates the employment of all the resources of scientific medicine bearing on the treatment of disease.

If we regard disease as an expression of morbid physiology all methods or means employed to bring about physiologic equilibrium should be included in scientific medicine, provided they are based on sound scientific principles.

If it be remembered that life is expressed by a rythmic flow of automatic functions known as reflexes, one can readily conceive that some knowledge of these reflexes is of great importance in successfully combating the many morbid changes found in the human body.

Each reflex has its opposite or antagonistic reflex and when both are in coordination a physiologic condition results. A disturbed function or a pathologic condition results when there is an in-coordination of these reflexes. When a state of in-coordination prevails, there ensues a functional disturbance and finally, pathologic changes in the organ or tissue affected. In other words, pathologic tissue change is not a prerequisite of disease, but is physiology in a state of disequilibrium; that is, perturbed physiology creates its own pathology and anatomic changes are sequential to disturbed or perverted physiologic functions.

*Read before the Madison County Medical Society, Nov. 7, 1913.

Many clinical symptoms are merely defensive reflex phenomena. As a paradigm may be mentioned hyperemia. As is well known, this phenomenon has been utilized by Bier and others in the treatment of various affections. Muscular spasm may be mentioned as another defensive reflex expression. In this way a diseased joint or spine may be immobilized or a diseased or sensitive viscus protected.

The different reflexes may be elicited in various ways, but as the discussion of these phenomena is limited in a paper of this length we shall, as an illustration, refer briefly to the heart reflex of contraction. What is known as the reflex of Abrams is a contraction of the myocardium, of varying duration, when the skin of the precordial region is irritated. It is very probable that the chief benefit derived from the Nauheim baths in cardiotherapeutics is due chiefly to the elicitation of the heart reflex of contraction by friction of the precordial region with coarse towels.

Another method of eliciting this heart reflex is by irritating mucous membranes, be they nasal, pharyngeal, laryngeal, esophageal, gastric, intestinal, rectal, urethral or others. The inhalation of irritating vapors by their action on the respiratory mucous membranes will produce this heart reflex. In a few instances ether and chloroform by this action have produced a veritable cardiac inhibition.

Sudden and mysterious deaths have occurred during urethral instrumentation; probably due to producing this reflex to the degree of inhibition by the irritation of the urethral mucosa. This reflex phenomenon may also explain the sudden deaths of gastric origin.

Percussion of the muscles of the upper extremities will also produce this reflex.

Psychic influences act powerfully in causing this heart reflex, especially the emotion of fright. This can be readily demonstrated with the X-ray. Inform the patient standing before the X-ray that you find it necessary to cauterize a certain area with a red hot iron, or frighten him in some other way, and the heart will be seen to reduce in size and appear to retreat toward the neck, thus demonstrating some justifications for the conventional expression: "My heart was in my mouth." Because of this influence on the heart it is of

great importance to eliminate emotional factors in treating heart disease.

Concussion of the spinous process of the seventh cervical vertebra is another method of eliciting this heart reflex by stimulating the vagus fibers which increase the contractility of the myocardium.

Now, it is through influencing the tonicity of the vagus or pneumograstic nerve that beneficial results follow in treatment of exophthalmic goitre.

The tenth or pneumogastric nerve is the longest and most extensively distributed cranial nerve and contains motor and sensory fibers. This nerve sends motor branches to the soft palate, pharynx, larynx, bronchial tubes, heart, and abdominal organs, and sensory filaments to the pharynx, larynx, trachea, and esophagus. It also communicates with the sympathetic and the 9th, 11th and 12th cranial and 1st and 2nd cervical nerves.

Now, Abrams' theory of the cause of exophthalmic goitre is an angioparalytic affection producing a vagus hypotonia; and the results obtained by his method of treatment in this disease justifies one in concluding that this theory is not far wrong.

Furthermore, the physiologic tonus of the vagus is dependent on the thyroid secretion. When the latter is increased above normal a state of hyperthyroidism ensues.

Variations in vagus tone may involve the entire nerve, or it may be confined to one or more of its individual branches. In a state of hypotonia of the vagus the blood vessels of the tissues or organs supplied by this nerve are in a more or less relaxed condition conducing to a state of congestion. Increasing vagus tone puts those blood vessels in a state of contraction, because their walls become more tense, and it is reasonable to assume that one can diminish the activity of this gland by diminishing its circulation.

Now, any method of treatment which will reduce the blood supply to the thryroid gland will prove beneficial in this affection. Every successful method of treatment of this disease, either medical or surgical, has been directed toward the reduction in the size of the thryroid gland.

The theory which has gained most favor as the cause of exophthalmic goitre or hyperthyroidism is a hypersecretion of the thyroid gland, the systemic effect of which is a form of chronic intoxication. But what causes this hypersecretion? Any cause such as some of the acute infections, over-fatigue, depressing emotions, especially worry, anxiety, and fright may be etiologic factors in this disease. These states or conditions conduce to a vagus hypotonia, this in turn bringing about an excessive functionation of the thyroid gland as previously explained.

Increasing vagus tonus by stimulating the vasomotor center in the cord by concussion of the seventh cervical spinous process suffices to relieve and even cure the affection in question.

The symptoms which yield most rapidly to treatment by concussion are tachycardia, flushing and tremor. The enlarged thyroid also yields if the enlargement is vascular. If the enlargement is due to the development of fibrous tissue no reduction in size of the gland need be expected by this treatment. When the gland is soft and tender to the touch and a distinct systolic blowing is heard an auscultation reduction to normal size may confidently be expected. In other words, the greater the vascularity of the gland the greater is the chance for its reduction by this treatment.

Occasionally one meets with a goitre which is a true hypertrophy occurring in a response for an augmented supply of secretion. Here the use of thyroid extract will cause a reduction in the size of the gland.

After the cardinal symptoms have subsided and the vascularity of the gland has been reduced to normal by the concussion treatment, sometimes a considerable enlargement will still remain. This will be firm and unyielding to the touch with no systolic blowing sound and is due to fibrous tissue development. This, however, may be still further reduced by the use of the galvanic current.

An electrode saturated with a solution of thiosinamine and attached to the positive pole is applied over the goitre, the negative electrode applied to an indifferent place. Treatments of ten minutes each may be given two or three times a week.

Exophthalmos may or may not yield to concussion. If it is due solely to contraction of Muller's muscle results may be expected.

This muscle is attached to the bony wall of the orbit and is inserted into the sclerotic coat of

the eyeball and the upper and lower lids, and is innervated by the cervical sympathetic.

In the norm the fibers of the vagus and the sympathetic fibers are in physiologic antagonism, the action of one counterbalancing that of the other. In hyperthyroidism this balance is disturbed, the sympathetic fibers being in the ascendant producing a vagus hypotonia. By increasing vagus tone this physiologic disequilibrium is removed, thereby overcoming the contraction of this muscle and the exophthalmos due to this cause is overcome.

In cases of long standing the exophthalmos may be permanent owing to a deposit of orbital fat even though the muscle of Muller is no longer in a state of tonic contraction.

Concussion treatments are usually given daily. For this purpose are used a plexor and plexi-meter. The plexor is a hammer commonly used for diagnostic purposes. The pleximeter is a piece of metal covered at one end with rubber. Concussion blows should be delivered directly over the spinous process of the seventh servical vertebra at the rate of about two per second, continued for one-half minute, followed by a half minute interval, and this repeated so that a seance will last three minutes.

Under this treatment in recent cases a decided improvement will be manifest in a few weeks. Tachycardia, heart irregularities, flushing, excessive perspiration, etc., will rapidly subside. In some cases no other treatment will be found necessary.

In some resistant cases other measures should be added, such as rest in bed, the elimination of emotional factors, the avoidance of tea, coffee, alcohol, and drugs which decrease vagus tone, such as iodides, adrenalin, atropin and thyroid extract.

Drugs which increase vagus tone may be of some benefit, such as quinine hydrobromid, iron arsenate, ergot, nux vomica, digitalis and strophanthin. Some good results have been reported from the use of chromium sulphate. Iron may be beneficial for the anemia. Among the most satisfactory drugs for favorably influencing this disease is quinine hydrobromid given to the limit of the patient's tolerance. The drug must be taken for months or years. Quinine increases vagus tone and its beneficial action in this affection is in all probability due to its effect on the vagus. It is well known that quinine is effective in enlargement of the spleen. The best explanation of this action is that it contracts this organ by stimulation of the vagus.

Rest in bed is a valuable aid in the treatment of this form of goitre, because mental and physical rest are important factors in the restoration of normal vagus tone.

When the sympathetic is stimulated the tonicity of the vagus is reduced. Emotional disturbances produce sympathetic irritation, and therefore vagus depression. Hence the elimination of emotional disturbances is important.

There may be many minor and atipic manifestations of hyperthyroidism. The thyroid gland is more active in women than in men. This accounts for the predominance of their nervous and hysterical symptoms, and the fact that this affection occurs more frequently in the female sex.

Menorrhagia in young girls and women is often a symptom of hyperthyroidism. This form of menorrhagia may be controlled by the administration of mammary extract.

A transitory hyperemia of the gland occurs in females at puberty, menstruation, and pregnancy. And it is not unlikely that many of the symptoms at these periods are due to a supernormal secretion of this gland. Menopause symptoms may be associated with hyperthyriodism.

Typical cases of this affection are easily recognized, but it requires diagnostic acumen for the recognition of minimal hyperthyroidism. And this is of importance, as the early recognition of these atipic forms may determine the etiology of many obscure affections which masquerade under many different names. Treatment by spinal concussion is equally efficient in these atipic forms of this disease.

The medical profession is indebted to Dr. Abrams for this method of treatment of this disease. It is so simple and easily applied that it should at least be given a trial. There is ample clinical evidence to show that this is a more efficient means to effect a symptomatic cure in this disease than any other known non-surgical method of treatment. Nearly all cases can be benefited and a large percentage symptomatically cured by the use of this method in connection with other appropriate treatment.

It is true some cases of failure have been reported, but on inquiry it was found that this was due to faulty technique. Either the vagus was over-stimulated or stimulation applied on a too extensive area.

If the vagus is over-stimulated the reflex is exhausted and no beneficial results will be obtained. Stimulus should not be applied to exceed a half minute at a time. Neither should the treatment be applied, to produce this particular effect, over any other vertebra except the seventh cervical. For instance, if this treatment is applied over the third and fourth dorsal vertebrae the opposite effect ensues, that is, the tone of the vagus is diminished and the symptoms of the affection under discussion will be aggravated.

When the third and fourth dorsal vertebrae are concussed the sympathetic roots of the second to the fourth thoracic segments of the cord are stimulated, and therefore vagus tone is diminished because the sympathetic and the vagus are in physiologic antagonism and when one is stimulated the other is depressed.

Concussion or pressure at the seventh cervical spine augments vagus and depresses sympathetic tone. Concussion or pressure between the third and fourth dorsal spines increases sympathetic and decreases vagus tone. Concussion or pressure should not exceed one minute in duration to avoid exhaustion of the reflex.

We owe it to our patients to give them the benefit of a thorough trial by this method of treatment in the disease under discussion before resorting to surgery. And considering the results obtained by the physicians who have tried it, it is not unreasonable to assume that a symptomatic cure will result in a large majority of cases and beneficial results will follow in all cases.

DRAINAGE OF THE GALL-BLADDER IN TYPHOID CARRIERS.

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It is not my intention this evening to present a complete scientific paper on the subject of typhoid carriers, nor as complete as was my original intention, but merely to report a case under my immediate care recently.

Owing to my paper being advanced somewhat earlier in the season than I expected, I am not able to furnish the final data which I hoped to have on examining the patient after four months. She lives in Dakota, and was to have returned to see me this month.

Mrs. S. came to Chicago, July 21, 1913, for a pelvic operation. Her general symptoms were headaches, nausea, nervousness and prostration, with periodical "bilious attacks." About five years ago had an attack of illness lasting three months, at which time her physician had several consultations and the case had been called an atypical typhoid, there being at no time any rise of temperature, although repeated attacks of chilliness. Coming here on the train she had an unusually severe bilious attack, with vomiting, diarrhoea and headache, so that on arrival here she was ill, and so was urged to go immediately from the hotel to the hospital after one day.

On physical examination she was found to be poorly nourished, skin yellow and dry, complexion poor and red splotches would appear on the face, neck and arms and disappear irregularly as to time and location. No splenic enlargement, no marked tympany over abdomen, no iliac tenderness, no tenderness over gall-bladder or stomach.

A blood specimen sent to the municipal laboratory, July 23, was reported back: Widal positive. Thinking it might have been confused with that of another patient, sent at the same time, two other specimens were sent to two different private laboratories at the same time, both reporting back after sixteen hours:

Widal positive. July 25, 1913.

Dilution	Reaction.		
	5 mins.	1 hour.	16 hours.
1-50	Motile	Partial	Complete.

Immobility, complete.
Agglutination, marked.
Disintegration, none.

I then had a complete urinalysis with a culture made of same, which resulted, fresh smear: No bacteria; sediment, entirely inorganic; tubercule bacilli, absent; typhoid bacilli, absent; colon bacilli, absent; diplococci and micrococci, present; growth, slight. Feces showed; typhoid bacilli, few present; colon bacilli, few present; isolated typhoid bacilli produce no indol.

Fermentation tests negative. Widal test positive.

I will here mention that all the superficial glands of the body were enlarged, i. e., cervical, axillary, inguinal, popliteal, etc.

After several days' observation, I concluded on advice to drain the gall-bladder, which was done on July 28.

The usual incision was made, and on opening the peritoneal cavity a cyst-like organ appeared at opening. On digital examination it seemed too large for the gall-bladder, and more like a distended stomach or bowel, being fully the size of a large orange, but in tracing it to its cystic duct and supraduodenal common duct it was identified. After fixing it, a trocar was introduced, but no bile appeared until it was pushed well down into the cystic duct, the organ being evidently distended by gas and only a small amount of thick, tar-like bile being present.

On examining the interior digitally, found a rough and thickened endothelium with trabeculae, each one of which seemed to contain deposits of inspissated bile, which was also adherent to the entire wall and had to be removed by wiping off with dry gauze repeatedly. On inspection it showed thickening and extreme redness, possibly on account of the recent attack of irritation. No stones were present, only a quantity of the bile particles. A drainage tube was inserted and the patient made an uneventful recovery, without temperature at any time since first seen.

Bile was examined bacteriologically. Culture was negative.

Examination of blood was made:

July 31: Positive, third day after operation.
Aug. 6: Negative, eighth day after operation.
Aug. 8: Negative, tenth day after operation.
Aug. 18: Negative, twentieth day after operation.
Aug. 23: Negative, twenty-fifth day after operation.

Ophthalmic examination was made by Dr. Arthur Hunneman, Aug. 25, 1913, as follows:

Right: Media: Lens—one small opacity, but do not believe this is of any importance in her case. Vitreous—one fairly large floating opacity, semi-transparent (exudate).

Left: Media—clear. Fundi—optic nerves of both negative. Periphery of fundi—degenerative changes; small semi-transparent grayish areas of exudate, as if early stage of specific choroiditis.

In the April 26 number of the *Journal A. M. A.*, Dr. Thomas J. Leary, First Lieutenant of the Medical Corps, U. S. Army, reports two cases, in which he removed the gall-bladder and cystic duct. The laboratory reports are the same as in mine as to feces, positive for typhoid; urine, negative. Both of his cases cleared up in nine days.

Owing to a suggestion of the oculist that the ophthalmic finding might be due either to luetic or a long-continued autotoxemia, a Wassermann was made on August 28, which was negative. No history of lues of either the woman or her husband was obtained. She made an uneventful recovery, gained in weight, and a letter recently received reports she was better than for years.

Simpson, of Winnipeg, in speaking of typhoid in Manitoba, believes water contamination plays a subordinate role in the causation of typhoid in cities or towns, but that the itinerant typhoid carrier is a greater factor and recommends that no convalescent typhoid patient be discharged as cured by hospital or physician until examination of urine and feces be found negative.

Charles R. Grandy and C. J. Andrews, of Massachusetts, state that ten per cent. of convalescents when discharged from treatment still have atcive bacilli in the discharges.

Aside from the cases of Dr. Leary, the only references to be found on the subject in American medical literature were in the *Journal of Public Health*, showing that work along these lines is recent.

So far all the specific cases mentioned are of male carriers, usually soldiers, sailors, harvesters, etc., showing the aptitude to overlook it in the female who wanders around less and complains of multitudinous ailments more or less easily, all of the time.

CONCLUSIONS.

1. Typhoid fever diagnoses are not always made at the initial illness.

2. In view of the fact that typhoid is so general in its distribution and now known to be so chronic in its course, would it not be well to add to our routine examination of all cases showing autotoxemia as a symptom, or other obscure symptoms, the Widal test, the urine culture and examination of feces?

3. That we seek to determine whether chronic typhoid carriers yield to modern medicine or are surgical cases.

4. That we ascertain whether a simple drainage of the gall-bladder be sufficient, or removal of gall-bladder and cystic duct be necessary.

5. That typhoid carriers should be prevented from wandering, *i. e.*, be placed under public health control, but *treated* as well as quarantined.

DISCUSSION.

DR. E. M. BROWN: The subject of typhoid-carriers is a long one, and the question of drainage of the gall-bladder in typhoid-carriers is at the present time, of course, unsettled. There are a few things that it might be worth while to mention in regard to typhoid and gall-bladder disease. It is a fact, as we undoubtedly know, that the gall-bladder seems to be the favorite seat of the typhoid bacillus, or, at any

rate, the typhoid bacillus lives for a long while in gall-bladders. It is found in the intestinal tract frequently, of course, and for many years after the attack of typhoid fever. It is found in the intestinal tract some time before the patient has had typhoid—at least, presumably before he has suffered from it. It is probable that those cases in which the bacillus has been found in the intestinal tract and gall-bladder, without the history of typhoid, belong to that class of cases in which the only symptom of typhoid was a characteristic cholecystitis. Many such cases are reported in the literature, many of which have been operated upon, the gall-bladder removed or drained and the patient recovered.

As to how the bacilli get to the gall-bladder, whether through the intestinal tract, the circulation, or the lymphatics: It is believed by most observers today, with some in doubt, that the typhoid bacillus gains entrance to the gall-bladder through the blood stream. Experiments have been performed by various workers, in which the common duct has been tied in rabbits, and then the typhoid bacillus introduced intravenously, and later, as early as eight hours, the bacillus has been found in the gall-bladder, presumably the only way of entrance being the blood stream. Joseph Koch found that the bacillus of typhoid gained entrance, not from the intestine, but through the circulation—possibly through the lymphatics as well, as has been suggested in regard to other infections which gain entrance to the gall-bladder; for instance, when we have infection of the appendix, later having attacks of gall-bladder disease, the infection presumably traveling along the lymphatics and gaining entrance to the gall-bladder in that way.

Having, then, the bacillus in the gall-bladder, what shall we do with it? Most cases are amenable to surgery or drainage of the gall-bladder. The cases might be classed as convalescant carriers, the so-called precocious carriers, the temporary and intermittent carriers and chronic carriers. These last probably constitute that class of cases in which typhoid bacilli are found over three months after the attack of typhoid. Sometimes in these, and especially in acute typhoid, acute cholecystitia lights up, that is, symptoms referable to the gall-bladder are present, of so acute a nature that they require immediate drainage, caused either by the bacillus alone or combined with other bacteria in the gall-bladder.

Advice as to what should be done in chronic carriers would depend largely on whether we could limit the growth and multiplication of the bacteria to the gall-bladder and ducts. If we are convinced that the growth of bacteria is limited to the gall-bladder, and that they are being poured into the intestine, consequently exposing others to infection, then probably it would be justifiable to drain the gall-bladder, and thereby overcome the tendency to carry the infection further. However, it is difficult at the present time to say when we can do that. Cases have been operated upon—typhoid carriers, in which the Widal was present and in which the bacteria were found in the intestine, in which there was a cholecystitis present, and the gall-bladder drained, and no typhoid bacilli found in the gall-bladder. On the other hand, they are found very frequently in the gall-bladder, the bile being a particularly good medium for the growth of the typhoid bacillus.

As to the length of time in which they might be alive in the intestine or gall-bladder. They have been found in the intestine or gall-bladder as long as fifty or fifty-two years after the attack of typhoid. They are supposed ordinarily to disappear within three months, but in some chronic typhoid carriers they have been found after such a period as just stated.

The evidence in favor of chronic carriers transmitting the disease is overwhelming; the bacilli being constant in the stools, urine, etc. However, attention has been called to evidence on the other side. The danger of typhoid, it is said, is not so great as is generally supposed, even in those who have gall-bladder disease, and a great number of typhoids have gall-bladder disease, and vice versa.

Linnosier calls attention to the fact that while there are perhaps ten thousand people visiting the waters at Vichy yearly, most of whom have gall-bladder disease, very few cases of typhoid occur there. Of course, it must be remembered that the people visiting there come from the wealthier classes, are more cleanly than the average perhaps, and are advanced in years and consequently the danger of infection from them would be less than among younger or less cleanly people. However, I think the evidence is all in favor of the fact that the typhoid carrier is a dangerous person, especially one with the typhoid germs in the gall-bladder, and if I had my choice I would like to drain all those cases. However, this is not practicable at the present time, and possibly not advisable until we are more certain as to the sources of infection—especially the growth—whether it is in the gall-bladder itself, whether it occurs in the hepatic ducts, in the smaller ducts of the liver, as has been shown by some, in little clumps and nests in which they may be hidden for some time and suddenly break away, or whether they remain stored up in other organs, the intestine, genito-urinary tract, and even the cerebro-spinal fluid. Only such work as Dr. Lobdell has reported will finally elucidate these points.

Dr. I. J. K. Golden: I think it would save much discussion on the subject of draining the gall-bladder in cases of typhoid fever if we bear in mind the action of hexamethylenamin. It seems to me that if every patient recovering from an attack of typhoid fever be ordered to take, say, ten grains of formin for a time until all of the bacilli have disappeared from urine and feces, we will have less worry about draining the gall-bladder. I have not had occasion to drain the gall-bladder in a case of typhoid and cannot see any justification in exposing a patient to the inconvenience and danger of gall-bladder drainage.

INSANITY WITH SPECIAL REFERENCE TO THE DIAGNOSIS AND PROGNOSIS OF ITS COMMON FORMS.*

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The subject of insanity should interest not alone the alienist and psychiatrist but members of the general profession as well. When we come to realize that mental disorders occur with surprising frequency in rural as well as in urban districts and that the heavy burden of responsibility as regards the early diagnosis and perhaps early treatment of the same must needs rest upon the general profession, we can better understand the peculiar attitude which the practitioner necessarily occupies in his relation to the various mental affections. It is not the specialist, skilled in mental disorders, who first sees the vast majority of these unfortunate individuals and gives them the benefit of special knowledge and training, but it is the faithful family physician who first comes in contact with the border-line and acute cases and upon him largely rests the responsibility not only of detecting the early signs of insanity but of instituting prophylactic measures before pronounced mental changes occur. It is not the object of this paper to present an ultra-scientific dissertation on the various insanities, but rather it has been prepared in the hope of stimulating interest in clinical psychiatry among members of the general profession.

Without attempting to enter into the general subject of insanity, particularly in regard to the merits or demerits of existing classifications, I will for purposes of simplicity present the clinical classification of the elemental forms of individe into six groups as follows:[1]

sanity as outlined by Dercum. These forms I will

1. Delirium, confusion and stupor.
2. Melancholia, mania and circular insanity. (Manic-depressive insanity.)
3. Dementia praecox.
4. Paranoia.
5. Neurasthenic-neuropathic insanities. (Psychasthenias.)
6. Dementia.

*Read at a meeting of alienists and neurologists, held under the auspices of the Chicago Medical Society, June 23-25, 1913.

[1]Dementia praecox was not treated by Dercum as an elemental insanity in his original communication, but recently it has been included in Group 4 under the caption "Hebroid-paranoid."

Using this classification as a working basis I will now submit certain clinical factors which are of more or less aid in arriving at a diagnosis of a mental disorder. Briefly enumerated these factors are as follows: The age of the patient, the predisposing or exciting causes, the onset and course of the disease, the emotional state, the presence or absence of hallucinations, illusions or delusions, the condition of consciousness and memory, and the absence or presence of physical signs.

Diagnosis. In considering the *age* of the patient in relation to mental disorders many interesting and practical points can sometimes be ascertained. We know that in childhood insanity is a rare occurrence. True it is that we find idiocy and imbecility at this time, but these conditions are not insanities, but are due rather to gross morphologic and pathologic changes or defects. The forms of mental disorder which characterize this epoch are those of the first group, delirium, confusion and stupor. The acute infectious diseases, the exanthemata, etc., are encountered often with a delirium accompanying the height of the febrile movement or following in its wake. Delirium is quite a common occurrence, confusion somewhat rare, and stupor while more frequently encountered than confusion, is still less met with than delirium.

The period of pubescence extending from the thirteenth to the twenty-first year is of vast importance as regards the development of certain mental disorders. I refer especially to the insanity of youth or the dementia praecox group of Kraepelin. While delirium, confusion and stupor may be met with, mania and melancholia are rare, although as early adult life is approached periods of depression or excitement may foreshadow the development of a member of this group; the neurasthenic insanities may be encountered, but as before stated the dementia praecox group is especially characteristic of this period.

Early adult age, from eighteen to thirty years, is a time in which certain mental disorders are most prone to occur. While delirium, confusion and stupor may still be encountered and members of the praecox group may occasionally be met with, as is also true of members of the neurasthenic group, still there can be no question but

that manic-depressive insanity occurs pre-eminently during this age.

Mature adult age is sort of a halfway station in the span of life. During this period which extends from the thirty-fifth to the fiftieth years of life, members of groups 1 and 2 are sometimes encountered, the neurasthenic insanities and likewise dementia may be met with, but the disorder which most requires our attention is paranoia or systematized delusional insanity. Incidently, the vast majority of cases of dementia paralytica occur also during this period of life.

The involutionary period of life occurs from the forty-fifth to the sixtieth year, the so-called middle, adult age. During this period we know that normally the nutrition begins to wane and the catabolic changes of metabolism begin to equal or exceed the anabolic processes. It is not unnatural therefore to expect to find diseases characterized by involutionary changes in nutrition and here the involutional type of melancholia is met with. We find that this type differs somewhat from the melancholia of early adult life in that its wave of depression is perhaps not so great, but is of much longer duration and offers a much less favorable prognosis. Mania may occur at this age but does so only with rarity, while the same possibilities as met with in mature adult life may also be encountered.

In considering the insanities of old age, from fifty-five to seventy years, we at once think of senile dementia, although we may also find members of the first group.

Thus we see that delirium, confusion and stupor may occur at any period of life. Manic-depressive insanity appears from adolescence to old age, but is most common between the eighteenth and thirtieth years and again in middle life. Dementia praecox appears most frequently between the ages of fourteen and twenty-four, some few cases of hebephrenia developing earlier and occasionally the paranoid form appearing later. Paranoia is distinctly a disease of adult life, appearing usually between the third and fourth decades. Dementia paralytica or paresis is usually encountered from thirty-five to fifty, although some cases may appear earlier or later. The neurasthenic insanities may occur from puberty to middle life while senile dementia is distinctly an affection of old age.

In considering the *predisposing* or *exciting causes,* the family and personal histories should be carefully considered, as much light may be thrown on an otherwise darkened and uncertain diagnosis. For instance, given a history of insanity, epilepsy, neuropathy, alcoholism, etc., we at once realize that favorable conditions or influences existed among the ancestors for the development of mental disorders. Kraepelin holds that hereditary influences in the manic-depressive group are present in eighty per cent of the cases, while Dercum maintains that the percentage is even higher. Again, such a history is in perfect keeping with the development of such conditions as paranoia, the neurasthenic group and even dementia praecox, although it would appear that the latter is not so dependent on such a history as are some of the other forms, especially the manic-depressive group. With the various laboratory aids now at our disposal, particularly the serum complement test of Wassermann, we feel certain of the role played by the spirochaeta pallida as the exciting agent in the vast majority, if not all, of the cases of dementia paralytica. This is especially emphasized by the work of Noguchi and Moore demonstrating the presence of the spirochete in the cortex cerebri of paretics, hence the occurrence of a history of an antecedent leutic infection, or a positive Wassermann reaction, particularly in a middle aged individual, would at least be suggestive of paresis. Should the patient be suffering from a severe infection, as one of the exanthemata, or a pneumonia, or typhoid fever, or convalescing from such a condition, the likelihood is that we are dealing with a member of the first group, delirium, confusion or stupor. This would also hold true if there was a history of prolonged alcoholism, or the abuse of morphin, cocain or other drug.

The *onset* and *subsequent course* of the disease is of inestimable diagnostic value in some cases of mental disorders. For instance, examination of the patient alone might avail but little in differentiating between imbecility and dementia. Here we have in common a quantitative mental deficiency, yet in imbecility there has always been mental poverty while dementia represents a loss of something the individual formerly possessed.

Without a history it is at once apparent that a diagnosis may be extremely difficult, if not impossible, in such a condition or in a case of imbecility and arrested dementia praecox. A history of a slowly developing and deepening depression accompanied by delusions of self-blame would point toward a melancholia, especially if similar attacks had previously been entertained. True the depression of paresis in a middle aged individual may be suggestive of a beginning involutional melancholia but the probable evidence of syphilis, the presence of physical signs, and the absence of "self-blame" would render the diagnosis plain. The statement that a child had ceased to make progress at school, remained quiet and indifferent to his surroundings, entertained delusional ideas and ran away from home, would lead one to suspect dementia praecox. In an alcoholic, the sudden onset of mental symptoms with excitement, accompanied by visual and aural hallucinations, generally terrifying in character, suggests delirium tremens, while a similar excitement developing during the puerperal state would be suggestive of puerperal delirium.

In considering the role played by the *emotions* in the various mental disorders, there is little question but that the same is quite conspicuous in the manic-depressive group. Here is found usually a profound, persistent depression on the one hand, or marked exaltation and expansion on the other hand, the emotions dominating the clinical picture. While it is true that periods of depression and expansion occur in other conditions, yet the same are not as constant or characteristic as in the group just mentioned and are usually accompanied by other symptoms. For instance, in dementia praecox there seems to be no dominating emotional state and while periods of depression and expansion may occur there is also generally some evidence of mental enfeeblement. In paresis similar emotional states may be found but here we also have physical signs to aid us in making the diagnosis. The paranoiac usually passes through a period of depression (neurasthenoid state) which eventually terminates in a wave of expansion (change of personality) and while it may be said that the emotions play no special role, yet egotism and suspicion are usually present together with the characteristic delusions, systematized and fixed in type. In the neurasthenic insanities the individual is easily depressed and fear plays an important part as illustrated by the various phobias now known in the category of psychiatry. In fact the foundation of these phobias can usually be traced to some definite fright which served to establish the obsession. Sudden severe fright may be instrumental in bringing on an active delirium or where the delirium is already established the hallucinations and illusions may bring on a frightful condition, due to their terrifying nature.

A knowledge of the *presence* or *absence* of *hallucinations, illusions* and *delusions* is of considerable importance. In delirium, visual and aural hallucinations are marked, illusions may be quite noticeable but delusions, when present, are unsystematized in character. In melancholia, hallucinations of the special senses and various viscera are sometimes encountered while depressive self-accusatory delusions embodying the committal of the "unpardonable sin" are characteristic of this condition. In mania, on the other hand, hallucinations are rare, if they occur at all; illusions due to the rapidity with which impressions are registered in the cortex cerebri play the important role, while the delusions are non-systematized and expansive in nature. Paranoia hallucinatoria, as the name indicates, is characterized by the presence of hallucinations while paranoia simplex is just as much characterized by their absence, although in both forms delusions, systematized in character, are always present. In the neurasthenic insanities there is an absence of hallucinations and illusions, but sometimes false ideas based on viscereal sensations may be present.

Consciousness may or may not be affected in the various insanities. In delirium, confusion and stupor there is generally mental clouding as indicated by disorientation as to time, place and oft-times identity. In the manic-depressive group and in the neurasthenic group both consciousness and lucidity are preserved while in dementia praecox there may be no disturbance of consciousness until the affection is well advanced or it may even remain unaffected throughout the course of the disease. Paranoiacs are cognizant of their surroundings but dements

usually show considerable disturbance in the field of consciousness.

Memory of the attack of insanity also varies among the different groups. In delirium and stupor, memory is practically abolished while in confusion, particularly of the simple type, the individual may have slight recollection of his condition. In the manic-depressive group we find in the melancholiac an apparent weakness or sluggishness of memory which is due to a mental inertia, the so-called psychic retardation, rather than to any quantitative loss. In mania, particularly in the hypomanic form, we find not infrequently hypermnesia is present and that the patient is able to recite detail after detail of occurrences which took place during the attack. In dementia praecox, memory is usually undisturbed until the disease is well advanced and in paranoia there is usually little if any disturbance until the terminal stage is reached. There is no disturbance of memory in the neurasthenic group, but in dementia we would naturally expect to find some deficiency of memory present, ranging from a slight loss to a total loss. One of the characteristic signs of senile dementia, it will be recalled, is loss of memory for recent or newly acquired events, whereas the happenings of childhood and early life are readily recalled.

Unfortunately from a diagnostic standpoint, there are no special changes in the nervous system which are indicative of the nature of mental disorders. By this I mean to infer that the true or elemental insanities (with the possible exception of senile dementia) are not associated with nor dependent upon definite, demonstrable organic changes in the nervous system. However, we do know that dementia paralytica is an organic nervous disease and is associated with a somewhat definite pathology which gives rise to a train of *physical signs* somewhat various in nature. It is scarcely necessary for me to recall before this society the unequal and irregular pupils, the Argyll-Robertson phenomenon, the tremor of face, tongue and hands, the pre-articulate tremor of the lips, the erasement of the facial lines, the peculiar speech, the disturbance of coordination, the loss or exaggeration of the patella tendon reflex, the presence of an extensor toe phenomenon or the elicitation of the Kernig sign,—all of which help go to make up the physical signs sometimes found accompanying this disease.

With this brief presentment of the clinical factors which are of more or less value in determining the diagnosis of mental disorders, I wish now to touch upon the more common forms of insanity between which the general practitioner may be called upon at any time to make a differential diagnosis. Delirium and mania are mental states accompanied by excitement. Delirium may occur at any age, while mania is most prone to occur during the third decade of life. Usually a history of an exciting cause such as toxemia, infection, fever, etc., will be obtained in delirium while in mania the absence of these and the presence of a bad neuropathic or psychopathic history, with possibly an entertainment of previous attacks of a similar nature, will, in a large per cent. of cases, be found. Hallucinations, illusions, unsystematized and fragmentary delusions are observed in delirium, while in mania illusions play the important role, hallucinations occurring only with great rarity and delusions, while non-systematized, are expensive in character. For instance, the delirious patient will start at times at imaginary or misinterpreted objects, appears frightened, may call out in answer to imaginary voices, is confused, incoherent, disorientated, while the maniacal patient is rarely hallucinatory but the over-activity of his mental processes produces a "flight of ideas" and his incoherence resulting from the same is more apparent than real. Again, the duration of the attack should readily dispel any doubt since delirium at its best is but a matter of days, while mania is a matter of months and may even become chronic. A differentiation between some of the depressed mental affections may at times be somewhat troublesome. For example, take the depressed states occurring in middle life, *i. e.*, involutional melancholia, depressive stage of paranoia, and the depressive form of paresis. In each of these conditions depression stands out as the one cardinal clinical factor, yet the melancholiac is introspective, self-accusatory, and possesses suicidal tendencies; the paranoiac looks without himself for an explanation of his trouble, is persecuted, his false beliefs are systematized and fixed and are placed on some individual or group of individuals foreign or external to him-

self, while the paretic presents evidence of a quantitative loss of mind, a probable luetic history with positive Wassermann reaction and characteristic physical signs. Dementia praecox may become confused with manic-depressive insanity inasmuch as both may occur at the same epoch of life and present elements of depression and expansion. The emotional state in dementia praecox, however, is much more in the background than it is in the manic-depressive group, for in the latter group the emotions really dominate the clinical picture. The course of the disease in dementia praecox is more irregular, there being no definite wave-like course of expansion or depression such as is present in manic-depressive insanity. Again, there is often times evidence of mental enfeeblement, silliness and childish conduct in praecox while such conditions are foreign to manic-depressive insanity. Imbecility and dementia, as before stated, possess in common a quantitative loss of mind, but in the former there has always been mental poverty while in the latter there has been a loss of something the individual formerly possessed. Here of course a careful history will be of great value in bringing out just such a point.

Prognosis. With this brief resume of the commoner forms of insanity, together with some of their differential points, let us now turn our attention to a consideration of the prognosis of these forms of mental disorder. It is scarcely necessary for me at this time to dwell on the influence which early recognition and better treatment of the insane has exerted on the prognosis of mental disorders. This I am sure the society well understands.

In members of the first group, we find that the prognosis is almost universally good, the exception being that of specific febrile delirium which is invariably fatal but fortunately is an extremely rare affection. Confusion and stupor also offer a good prognosis but the duration, unlike that of delirium which usually lasts from a few hours to several days, extends into weeks or months.

Manic-depressive insanity as ordinarily met with is characterized by a tendency to recovery without intellectual enfeeblement but there is also a tendency to recurrence. The depressive phase (melancholia) usually lasts from four to six months or longer while the expansive phase or mania runs a somewhat shorter course. Involutional melancholia often lasts for a year or even longer. Circular insanity, or the alternating form, tends to recovery only when the disease occurs in early life but the prognosis in general is guarded, as it is not as favorable as that of either the depressive or expansive form alone. Any member of this group may become chronic and when chronicity is once established the disease is incurable.

The prognosis of the dementia praecox group is of course very guarded. In hebephrenia about eight, and in catatonia about twenty per cent. of the cases recover. Dementia paranoides is the least favorable of all since recovery is extremely rare. The majority of cases of praecox terminate in dementia or the disease may become arrested at any stage leaving a condition resembling imbecility.

Paranoia represents possibly the purest form of insanity known and as such offers a bad prognosis. The true paranoiac never recovers although he may present periods of remission or even intermission in the course of the disease.

The prognosis of the neurasthenic group depends upon the severity of the neurasthenic symptoms as well as upon the neuropathic background. Recovery may occur if the patient is taken in hand before the obsessions have gained much foothold, otherwise they are apt to become fixed and chronic.

Since dementia, whether primary, secondary or paretic, represents a quantitative loss of mind it offers, of course, a hopeless prognosis. In paresis the duration of life may vary from one and one-half to six years, the average length being between two and three years.

407 Equitable building.

ABSTRACT OF DISCUSSION.

Dr. J. W. Milligan, Michigan City, Ind.: I would simply like to ask the doctor if in his observation dementia praecox is increasing decidedly, or is it purely a matter of classification?

Dr. J. Cheston King, Atlanta, Ga.: The age at which paranoia is incipient varies, I think, much according to different authorities. Oppenheim's and Mendel's classifications differ to a great extent. I have on record now one case of paranoia that has gone as long as five years apparently cured. I have had numbers of cases that would react for six months to a year.

One case that I sent home apparently cured relapsed and was brought back in thirty days.

I have had one case of dementia praecox in a young man, perfectly developed from every standpoint, who apparently recovered, only to recede again in the course of about sixty days. A good surgeon, simply from the standpoint of research work, performed the operation of thyroidectomy on this patient. That was one and one-half years ago, and that young man today is perfectly well.

Dr. E. F. Leonard, Jacksonville, Ill.: According to some authorities there is no true paranoia. They all come to a paranoiac state. You may get it in manic-depressive, dementia praecox, etc. It depends on the kind of insanity the patient has when the paranaoic state exists, which determines whether the recovery will be slow or quick.

Dr. M. A. Bahr, Indianapolis, Ind.: I disagree with the last speaker, that there is no psychosis recognized as paranoia. He certainly must be mistaken, because paranoia is certainly a distinct entity, and it is in that condition that we have delusions. We have paranoiac symptoms, very many types, especially the manic-depressive. Also in the paranoiac type of dementia praecox. But the so-called chronic paranoia is certainly a distinct disease of its own.

As to whether paranoia is increasing or not, I would like to state that during the past few years we have had the largest increase in our group of paranoia patients—in the last year especially—five per cent. I do not think it is especially on the increase, but it is a matter of diagnosis.

Dr. G. H. Hill, Des Moines, Iowa: A pioneer alienist, after fifty years of experience in treating cases of mental derangement, declared that very few of them make a complete and permanent recovery, and I think that the longer alienists follow that line of work, and the more closely they follow the patients whom they have treated for an indefinite or long period of time, the more doubtful they are about complete and permanent cures from mental derangement which has continued for any considerable length of time. Cases of insanity may be compared somewhat to persons who recover from the use of morphin or from the use of alcohol. They may resume their duties and they may declare that they never felt better in their lives, and in a general way be regarded as normal. But how often morphin fiends relapse? We know how often alcoholic cases return to the use of a stimulant. And we know that if we will watch those cases for ten, twenty or thirty years, they are never completely cured, so that statistics are not very tenable in regard to the cure of almost any form of mental derangement. Dementia praecox, perhaps, is the best form to study, because it is very common, one-third of all insane in private or public institutions are cases of dementia praecox, and there is just as large a proportion of that kind of insanity outside of institutions as in, and yet no case makes a complete and perfect recovery. Mentally, they go lame throughout the rest of life, some only a little, but the majority will be so lame mentally that they will require natural or other guardians as long as they live.

Dr. H. C. R. Norriss, Enderlin, N. D.: There is a deplorable tendency among men to quote statistics. If these patients are declared cured and allowed to go out from the physicians' care, they will commit crimes, sexual and otherwise, that are a disgrace to the population.

Dr. J. W. Milligan, Michigan City, Ind.: I would like to say "amen" to that statement and to suggest that the value of statistics would be improved by age. If statistics were compiled after twenty years, they would not be so complimentary. Some years ago, in one of the Indiana hospitals for the insane we tried to establish a rule to never include in our reports the sane patient's recovery more than twice.

Dr. Charles J. Lewis, Chicago: Coming back to the paper on diagnosis, I would like to ask the doctor, when he stated that there were some conditions of brain disease that showed no physical evidence, if he intended us to understand him to say that there was no change in the cell bodies of the central cells where we have constitutional insanity, and where we have emotional states?

Dr. E. F. Leonard, Jacksonville, Ill.: I think there is a wrong idea prevailing of what is meant by the word cure. Insanity is like physical disease. If a man has rheumatism one year and he exposes himself to cold weather, he will get another attack; the same with pneumonia, tonsilitis, and pleurisy—they leave permanent changes. So in insanity.

Dr. H. C. R. Norriss, Enderlin, N. D.: I think he is cured, as in rheumatism, and you get it under control. It remains dormant, and under great stress it develops again. The maniac is the same, he has the disease, and with the slightest strain it comes back.

Dr. B. F. Williams, Lincoln, Neb.: With reference to cure, I think it is pretty generally conceded that any case of pure dementia praecox that manifests remissions of symptoms, if we will take the time to anaylze the mental condition, will show a reduction of mental power.

Dr. A. E. Sterne, Indianapolis, Ind.: I don't believe there is any mental condition which lacks pathology of some form. To my mind, it is wrong to concede that the function of a nerve cell expresses itself abnormally, while the anatomic condition of that cell is normal. I have been moved to divide the psychoses into three large groups; one, in which the element of heredity seems to be prominently marked, and which savors strongly of that type which we call the paranoid, to which practically hysteria and manic-depressive belong, although the latter is probably an intermediary between the paranoid-hysteriod and the immediate secceeding group in which inflammatory conditions in the brain cell obtain. To the second

group belong a large number of acuter manifestations, which show themselves pathologically as an edematous, exudative or serous cellular inflammatory process. Upon the degree to which this process has gone depends the outcome. Recovery may occur just as from any other inflammatory process, or secondary degeneration take place; in other words, if the vulnerable index of the cell has been surpassed, there follows a degenerative process, such as we see in the dementias and in dementia praecox. It makes little difference, I believe, just what the etiology in a large number of these cases may be, the cell swells whenever it is in the presence of media from which it can take fluids. The experimental work of Fisher shows that cells in the presence of acidosis swell and take water from any medium from which it can be obtained. Brain cells can always take water.

As regards prognosis and diagnosis. I think we may well lose sight of the etiological factor partially and rely more especially upon the degree to which the pathology has gone, to which degeneration has taken place. In those cases in which manifest degeneration has shown itself—and it is not usually difficult to determine, clinically, whether cases manifest evidences of cellular degeneration—I think the prognosis is very, very grave, but in the inflammatory processes, when the affected are treated as sick people, as distinct patients, the prognosis is not so bad.

Dr. A. M. Corwin, Chicago: This whole question of normal and pathological psychology which this conference is taking up is one in which the general practioner and specialists of all branches should be better informed. We laryngologists have to see fewer insane people than anybody else. People in general are sane, from the very fact that they consult us. But we do see occasional neurologic defectives. Within two weeks, for instance, one of my own patients had an epileptic seizure during an operation on the sinuses, under cocaine. Another case, a young lady, showed very decided mental aberration when brought for examination for something along my line. She was referred to a neurologist, and became more acutely disturbed, but was turned over to him right away as one who understood this proposition intimately., Under his observation she developed acute mania, possibly as the result of consulting a laryngologist.

Dr. Throckmorton (closing the discussion): I want to first thank the conference for the very kind manner in which they have received this communication. The fact of the matter is my experience has been quite meager as compared with others here. I wrote this paper with the idea that perhaps some few seeds in it might not fall by the wayside and would bring forth some results, and that members of the general profession might become interested in this work.

I believe that dementia praecox as a group of mental disorder perhaps has not increased, but that we are better able to grasp the different forms and put them into their proper category.

The question as to the duration of paranoia, I would answer by saying that I have had no personal experience with a case which has extended over five years, but that there is no question, according to authorties, but what we do have periods of intermission as well as remission in this disorder. Once the disease is established, however, its course is chronic. I think the attitude taken that the cure of mental disorders is an unknown quantity is a little broad. It seems to me that it would narrow us down considerably to tell the profession that there is no cure for mental disorders. Statistics prove many things, the same as the devil can quote Scripture to his own end, and of course while it may be true that there is a tendency on the part of those compiling statistics to prove or disprove this or that fact, nevertheless, it seems to me that we should look on the subject of recovery and cure in some mental affections in a broader sense than that which has been voiced.

As to the question, whether or not there are definite organic changes in any of these insanities, I fully agree with Dr. Sterne that there must be some pathology back of mental disorders, just as in any other abnormal condition. Naturally, the question comes up. Can we demonstrate these changes—tell definitely what they are? One point which I hope to bring out in the paper was that apparently we do not have any definite pathologic changes on which we can say "this is a case of manic-depressive insanity, this is a case of dementia praecox"—as we are now able to do in some cases of paresis. And we have reason to believe, in the light of certain investigations, that paresis in the vast majority, if not all, of the cases is due to the spirochaeta pallida, as has been shown by the recent work of Noguchi and Moore.

I do not know whether I have covered all of the questions brought up, or whether I have explained them to the satisfaction of those asking the same. If I have overlooked any, it has been unintentional.

DEPRESSED STATES APPARENTLY NOT IN THE MANIC DEPRESSIVE GROUP.*

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It is the intent of this paper to refer briefly to three depressed conditions, viz., simple or undifferentiated depression, symptomatic depression and depressive hallucinosis. These are found under the general heading, "Disorders of Mental Adjustment," in the classification of mental disorders in use among the Illinois State Hospitals. The literature in regard to the conditions under consideration is extremely meager,

*Read at a meeting of alienists and neurologists, held under the auspices of the Chicago Medical Society, June 23-25, 1913.

and for that reason this paper will, for the most part, be confined to observations of such cases, (so diagnosed) at the Kankakee State Hospital. From our records, one may judge that the above terms refer to symptom complexes or disease pictures rather than to any definite types or groups.

It is to be understood that in the two cases presented in this history, an analysis is not attempted. The only object is to illustrate a symptom complex.

Simple or undifferentiated depression is a condition characterized by a depressed mood which develops upon a more or less adequate basis. As an example an abstract of such a case may be given:

J. A. B., aged 28 years, female and single. Family history was bad; the father was addicted to the use of alcohol; the mother died a suicide at 53, and one sister was insane. The patient progressed well in school and afterwards worked diligently, but was said to have always been "of a sad disposition." There had been no previous attacks. She started to worry when her sister was admitted to a hospital for the insane in March 1910, but apparently recovered in a few days. After her mother's death in May, 1910, she became quite depressed, believed that she was responsible for her mother's death and her sister's illness because she had not taken care of them. Worried because she had gone beyond her means financially, etc. These ideas of self-accusation finally led to several attempts to commit suicide. Although it was stated that she tried to choke herself, took iodine and turned on the gas with suicidal intent, the record does not state that she was at any time in a dangerous condition. When she was asked later if she had really wanted to kill herself, she replied, "Why, no; I didn't want to die." . . . "I tied a handkerchief around my neck. I had some iodine and just touched it to my lips." From this it would seem that her attempts were of an abortive character, suggesting a neurasthenoid reaction.

She was sent to the insane hospital in September, 1910. She was found to be correctly oriented and showed no intellectual defects. There were no hallucinations and no delusions other than those given above. She said she came to the hospital because "I kept thinking if I stayed at home with my mother she wouldn't have died and I think I was the cause of the trouble for a long time. I think I went beyond my means in buying things. I kept thinking I was doing things wrong. We broke up housekeeping and I thought if I had stayed it would have been better. Then I was administratrix for the will. . . . I don't know; I just kept thinking and thinking all the time. I kept saying I wanted to die and kill myself."

The patient was clearly depressed and tears were noticed in her eyes much of the time. There was no evidence of retardation. She talked readily and moved about with about average rapidity. Interest was normal. While in the hospital she gradually improved and was paroled December, 1910, at which time she seemed normal, except for the fact that she was very slightly depressed once in a while. She was discharged as recovered June 18, 1911. The fact that she had no previous attacks, that she developed the depression after her sister was sent to an insane hospital and her mother committed suicide and that there were no evidences of retardation, are special features to be considered in the differentiation between this condition and the depressed phase of manic depressive insanity. No one feature would remove the possibility of its being manic depressive.

The cases of simple depression present histories similar to the one given here, *i. e.*, they develop a depression, often on a very adequate basis, accompanied, perhaps, by self-accusatory ideas or feeling of hopelessness, but lacking those symptoms most apt to lead to the general recognition of the fact that an abnormal state exists until, perhaps, an attempt at self-destruction is made.

Of the total number admitted to Kankakee these cases constitute only about 1.5 per cent. This is, however, no indication of their relative importance since there are probably many more cases which are never committed to an insane hospital. For this reason the type must be of great interest to the general practitioner and the laity, especially since in such cases suicide is a possibility. It is not easy to draw a dividing line between depression arising on such a basis and that which may be looked upon as normal. The death of a friend or relative, financial reverses, etc., are usually accompanied by more or less sadness, and many people have occasional days when, for no apparent reason, except, perhaps, a slight digestive disturbance, etc., a fit of the blues takes possession of them and nothing seems quite right. It is only when such attack of depression is deeper and more prolonged than would be expected in a person placed under such circumstances that they may be considered ill mentally. For such cases hospital treatment is of great benefit, as it is there that they can best be placed under conditions most favorable for restoration to the normal. Although the danger from suicide can never be entirely obviated, it is reduced to a minimum in an institution, and it is to be hoped that the prejudice which now

exists against entering a State hospital will in the future disappear.

Symptomatic depression is a term applied to those cases in which a feeling of ill-being or depression occurs as a symptom in the course of a somatic disease such as cardiac, renal, etc.

The "instructions for the collection of statistical data" in use in the State of New York characterizes the condition as a depression closely associated with some physical ailment which more or less, naturally, predisposes to despondency (heart disease, gastric disorders, malignant growth, etc.). Fluctuations occur in the depression depending largely on the severity of the physical symptoms or degree of discomfort or pain which the patient suffers.

Henry Head, in an article on "Certain Mental Changes that Accompany Visceral Diseases," published in "Brain" in 1901, found that depression occurred not infrequently in visceral diseases. He states that he does not "suppose that this condition (*i. e.*, the depression) is peculiar to those suffering from visceral disease. It can make its appearance as a primary mental manifestation, and in association with organic or functional diseases of the nervous system."

Such cases were excluded from consideration in his article. His object was, using his own words again "To describe the conditions under which this mental state may make its appearance in some persons who suffer from visceral disease." He does not consider the condition to be simply the mental distress in those who are forced to suffer pain and to worry about their inability to care for their families, etc. In fact the latter state "differs markedly" from the condition under discussion.

He states that a quite constant feature in the cases showing such changes, is reflected visceral pain. The depression he describes in brief as follows: "It comes on in paroxysms without reason and forces the patient to seek some solitary place, because he wishes to be alone." "To be spoken to only deepens his misery," and he may "burst into tears when spoken to kindly." Music makes the sufferer more miserable. He may be "haunted by an idea of impending ill," and in a few cases suicide may be considered, although but rarely, if ever, actually accomplished. The attack is not usually continuous throughout many days, but ebbs and flows in attacks of varying duration.

(The above is abstracted from Dr. Head's masterly article without any attempt to give a complete summary of it.)

Among the cases numbering, approximately, 3730, admitted to Kankakee in the last 5¼ years, there have been three cases classified as symptomatic depression and these were not altogether typical. Probably the small number is due to such cases being cared for in the general hospitals. It is likely that such a condition would be very difficult to recognize if it developed in one already suffering from a frank psychosis as most institutional cases do.

Depressive hallucinosis, quoting again from the "Instructions" for collection of statistical data in New York, are "Depressions generally of acute onset, in which hallucinations (usually auditory), dominate the scene, the sensorium remaining clear, the mood being one of anxiety or fear." Toxic or infective-exhaustive features are not demonstrable as etiologic factors. The picture is like that of acute alcoholic hallucinosis without clouding, but in which no such toxic factor can be demonstrated. At Kankakee there have been six cases so classified when first admitted owing to the resemblance of the picture then presented to that described above. None of these exactly fitted the characteristics of the class, however, and subsequent development has thrown more doubt on the first classification.

One case may be selected as an illustration, as it more nearly than the others approached the depressive hallucinosis symptom complex.

J. A., aged 26 years, a female and single. The mother was extremely nervous and one cousin on the maternal side had suffered from "nervous prostration." The patient acquired knowledge rapidly, but was self-conscious and rather solitary in habits. This was especially noticeable after puberty which occurred at 11 years. At 21, after having studied very hard, she was disappointed in not receiving a scholarship which she thought should have been given her. Following this she "broke down and had brain fever." The symptoms of this illness were not obtained, but it apparently lasted about a year, and several months after its onset she tried to commit suicide. She seemed to recover and worked for two years, until the onset of the illness on account of which she was sent to Kankakee. The disorder began abruptly. The patient wept; "turned against everybody," said she was losing her mind, and slept very little.

On January 11, 1909, one week after alleged onset, she was admitted to Kankakee. On examination it was found that she was correctly oriented, except that she could not give the exact day of the month. This she explained by saying that she had not kept track of the time since the voices began to bother her. The memory was good and she had a grasp of the situation. The chief feature appeared to be auditory hallucinations and it seemed to be these which dominated the actions and mood. She stated that people talked against her, although she tried not to pay attention to them, as "she knew she was honorable." The voices prevented her from paying attention to the tests. "People just make fun of me, laugh at me, just too perfectly hateful for anything." She added that she heard the voices most of the time. Whistles told her things which she would not repeat and when asked her reason for her attempt at suicide before admission, she said it was because she was depressed, "she could not stand it to listen to the voices when they were talking against her character." She was anxious, depressed and suspicious, asked the nurses to give her poison, as she did not care to live, peered into different rooms, appeared to be listening to something and became agitated at the least noise. She believed people read her thoughts and "were spying on her." When the nurses looked over some letters she said they were trying to get evidence against her. At times she answered slowly and at other times quickly. She was restless rather than retarded in movements. Patient said that the voices confused her and things did not seem quite natural.

There was a period lasting two or three weeks, beginning three or four days after she was admitted, during which she said she was less depressed and denied hearing voices. Except for this she remained suspicious, believed she was made fun of and was noisy at times for several months. She gradually improved and was paroled August 22, about seven months after she entered the hospital. Some time within two and one-half months after she left a letter was received saying she was getting along well and was working.

It is stated that during her residence in the hospital she was not always depressed, but rather perplexed and that she was impulsive, violent and unmanageable. This history is given especially on account of the picture presented when first admitted.

In this case there were said to have been two attacks between which she was apparently normal, suggesting an individual type of reaction.

The last attack seemed at first characterized by auditory hallucinations of a distressing character, which might be thought to be the basis of her mood, which was depressed. There was a lack of clouding, all of which calls to mind depressive hallucinosis. When some of the other features are added, however, a tendency to see a special signifiance in things as shown by her reading a meaning in the whistles, ideas of reference, thinking the nurses were spying on her and were trying to find evidence against her when looking over their letters, impulsive, violent behavior, a feeling of perplexity and a mood not always depressed, one must consider a dementia praecox type of reaction. The improvement might be interpreted as a remission. It is to be greatly regretted that the exact content of the hallucinations in this case was not obtained.

Among the six cases which were called depressive hallucinosis, among the 3,700 odd admissions to Kankakee since March, 1908, the time when the present classification of cases was instituted, two are still patients in the institution, one of them having been here a little over four years and the other a little less than two and one-half years. They both show deterioration of a praecox type.

A third case after being here for four years and showing depression with vivid distressing hallucinations of a somatopsychic character, was transferred to Peoria.

A fourth case died one year and three months after admission of a tubercular pulmonary abscess. Among other features this patient showed queer reactions and had ideas of reference.

A fifth was admitted first in June, 1909, having had previous attacks eleven and three years ago respectively. It is said she was not entirely well between attacks. She complained of auditory hallucinations and at times seemed depressed. She has been paroled twice since her admission in 1909 and seemed to deteriorate in regard to her interests.

The sixth case is the one whose history is given above.

It is not the purpose of this paper to outline depressive hallucinosis but on the contrary to report the small number so classed at Kankakee and to call attention to the fact that they are not clear cases of the disorder. To my knowledge nothing has been published in regard to the condition and it is hoped this paper will call to mind of some of those present, cases they have had which may be true pictures of the conditions.

In closing I wish to thank Dr. H. D. Singer for kind assistance in the preparation of this paper.

ABSTRACT OF DISCUSSION

Dr. M. A. Bahr, Indianapolis: The papers that have just been presented to us go to show that the more we know of these conditions the more faulty we will find our classification of insanity. It shows how complex these cases are and how complicated and difficult it is oftentimes to classify some of these patients. It often makes us think that our psychiatric nomenclature is far from what it should be. We have a very large number of unclassified cases—patients not classified for years. One point, however, in regard to the depressed type of the manic-depressive psychoses is the infrequency of hallucinations occurring in these conditions. In my experience in less than ten per cent of the cases do we find hallucinations in this particular type of insanity. When present in these cases they are generally found very late in the disease and the psychosis is invariably founded upon a severe hereditary predisposition. In these cases it generally deals with the so-called publicity of thought. The patients complain that others hear their thoughts and they themselves can hear every thought repeated which occurs to them. The prognosis of these hallucinatory depressed cases is exceedingly bad and their transition into paranoia is not infrequent.

These cases of melancholia to which are superadded compulsory concepts are much more frequent than is generally supposed. These patients generally complain that many compulsive concepts force themselves upon them in the form of hallucinations.

Dr. Meyer Solomon, Chicago: One important thing I understand from the paper is that there is not any sharp dividing line between the normal and the abnormal, and in the same way there is no absolutely sharp dividing line between a manic-depressive insanity and dementia præcox, on the one hand, and, on the other hand, between hysteria and dementia præcox. We have many instances in which we are unable to state absolutely whether a certain psychosis belongs to the manic-depressive group or dementia præcox and the dividing line is not absolute. In the same way the dividing line between hysteria and dementia præcox is not absolute.

Looked at from the biologic standpoint I consider dementia præcox a condition in which we have a greater degree of biologic dissolution than we have in hysteria. We have many forms which seem to be stationary for years and in the end they may develop dementia. So in these particular forms, therefore, we have a condition which is practically on the border line between dementia præcox, on the one hand, and hysteria, on the other. It is important, therefore, to remember that though one may name it dementia præcox, another manic-depressive insanity, we have very many other reactions in individuals who are on the border line and partake of the qualities of both manic-depressive and dementia præcox.

Dr. W. F. Lorenz, Mendota, Wis.: It occurs to me that the primary constitution of the individual affects the psychosis of the disturbance that he ultimately develops. This holds good in many diseases as well as in the feeble minded. The point I tried to bring out in my paper was that in the alcoholic insanities the defect of constitution seems to dispose the individual to the psychosis, and as a consequence the study of heredity will help us. The efforts of the eugenist's work, normal as well as abnormal, in trying to establish characters that are transmitted, recessive or dominant, will ultimately place us in a position where we can foretell from the probable constitution whether the individual will develop psychosis or feeble mindedness. That was brought out by Dr. Singer, and, in fact, in almost every communication offered at this meeing. Dr. Bahr's paper this morning showed the effect of syphilis in the ancestry upon the constitution of the progeny, and this bears upon the same subject. The constitutional makeup is the phase that bears investigation and it might possibly elucidate the entire psychology.

Dr. Singer: Dr. Lorenz has emphasized what I think is the chief point. I do think that when we say that there is a great difference between the manic-depressive constitution and the constitution of dementia præcox it is a fact. It seems to me there is a hard and sharp line between the two. Although the two conditions seem different and offer us an explanation for some of the analogous cases which some of us group with manic-depressive cases and some as dementia præcox, the same mixture, as it were, of constitutional makeup is really accountable for the so-called mixed types and the typical forms.

Dr. Clark (closing the discussion): There is nothing I want to add, except to say that calling a case one of simple depression, symptomatic depression or depressive hallucinosis, simply refers to the symptom-complex, the picture, and not to the underlying cause.

THE SPIROCHAETA PALLIDA DEMONSTRATED IN SMEARS FROM A PARETIC BRAIN BY GIEMSA'S STAIN.*

GEORGE W. BROCK, M. D.,
Physician, Peoria State Hospital.
PEORIA, ILL.

The spirochaeta pallida has been found in paretic brains both postmortem and in the living. They are found in greatest numbers in the gray

*Read before the Chicago Medical Society, Dec. 8, 1913.

matter, the most fruitful region being the motor area, although they have been found in other regions, as the nerve fibre zones.

The method giving the highest percentage of positive findings being the Noguchi modification of Levaditi's method, in which sections, after treatment with a special fixative, are stained with nitrate of silver, the whole technic covering a period of over three weeks. Marie has demonstrated the spirochaeta from paretic brains both by the India ink method of Burri and the Fontana Tribondeau method. Forster and Tomasczewski were the first to find the living spirochaeta in the brain substance of living paretics. In their first twenty cases the organism was found in six cases using dark field illumination. The latter method is of value only in the living, or in very fresh brains.

Case Report: The patient, R. C., a white male, on admission to the Peoria State Hospital, October 21, 1911, was 33 years of age, with a history of syphilis ten years before and mental symptoms for the past eighteen months. The mental symptoms were of the dementing type, and the physical findings characteristic. Lumbar puncture gave the following result: Cerebro-spinal fluid clear, pressure slightly increased, cell count 60 per CMM. Nonne-Apelt and Noguchi butyric acid tests positive, Fehling's solution reduced, Wassermann positive in both spinal fluid and blood serum. Lumbar puncture two years later gave a cell count of 30 per CMM. with all chemical tests positive, the maximum reaction with the Lange gold-sol test being in dilutions of 1/40 and 1/80, complete reduction. Wassermann positive.

Death occurred February 24, 1914. For the three preceding days the temperature reached 105° F. daily, running up to 107° F. one hour before death.

At autopsy the brain weighed 40½ ounces, the decrease in weight being due to wasting of the convolutions, contingent upon which was a marked increase in the amount of cerebro-spinal fluid present.

The technic was that as ordinarily used in examining syphilitic material from various portions of the body. The arachnoid and pia mater were snipped off with sterile scissors and tissue forceps. Portions of the cortex from the gyrus frontalis and gyrus rectus were scraped off with a paltinum loop and smears made on slides. Proceed as follows: Fix in absolute alcohol one hour. Wash in distilled water, stain in Giemsa 24 hours. The Giemsa stain is diluted immediately before staining in the proportions of one drop of stain to one CC of distilled water). To each 10 CC of the solution used one drop of a 1 per cent. solution of potassium carbonate is added to intensify the stain. Wash, dry and mount in balsam.

The patient was confined in the hospital three years and ten months, the whole course of the disease being rather prolonged, covering five years and four months.

The spirochaeta has been found most commonly in brains of patients in which the disease has run a rapid course.

The value of the smear and Giemsa stain method is its simple and rapid technic, enabling one to make a number of smears from various portions of the brain, stain and examine, without the necessity of making sections, or the use of apparatus not found in the average physician's office.

NORTHWESTERN UNIVERSITY ALUMNI REUNION.

To be held during meeting of the Illinois Medical Society at Decatur, Ill. Luncheon will be served at the Decatur Club rooms on May 20, 1914, at 12:30 p. m., $1.00 per plate. All alumni of Northwestern University are urged to be present.

OTIS HARDY MACLAY, President.
ARTHUR B. EUSTACE, Secretary.

This one is vouched for by one who was there: A well known gynecologist of New York, who shall here be nameless, was doing a complicated perineorrhaphy at his clinic, when the patient, who had been doing badly under the anesthetic, suddenly required a tracheotomy. The gynecologist stopped his work and attempted the tracheal operation. He was soon at a loss as to how to proceed and a laryngologist across the hall was hurriedly sent for. In the hushed stillness a long Texan on the top row drawled out, "Lost, by Gad! and not three feet away from home." —*From the Williamson County Physician.*

This didn't happen in Johnston City: The doctor had just finished stitching up the injured hand. He was quite well pleased with his job, for it had been a much damaged hand. The patient looked at it carefully and said: "Doc, do you think that when this heals that I will be able to play the piano?" "There is no reason why you should not," answered the doctor, "if everything goes well." "Then, doctor, you are a wonder, for I never could before."—*From the Williamson County Physician.*

The early fly's the one to swat
It comes before the weather's hot,
And sits around and files its legs,
And lays at least ten million eggs,
And every egg will bring a fly,
To drive us crazy by and by.

—*Walt Mason.*

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MAY, 1914.

Editorials

ANNUAL MEETING OF THE STATE SOCIETY AT DECATUR, MAY 19-21.

The coming meeting gives promise of being one of the most successful meetings ever held by the State Society. The scientific program as printed in this issue is replete with articles that are of interest to every physician in the State. That any one attending the meeting will be repaid four-fold for the time and energy spent goes without saying.

The local committee has made preparation to entertain any number of members and their families that may attend.

Decatur has splendid hotel facilities, but in addition the local committee has made arrangements by which members who desire may be placed with private families and entertained in the best homes of the city.

Ample provision has been made for the ladies and all will find that the entertainments planned will allow no regrets.

The officers of the society are planning for a meeting of not less than 1,000 members and it is hoped that each member will strive to be counted present.

Come and be glad with us.

EARLY DIAGNOSIS OF TUBERCULOSIS.

In delivering the Bradshaw lecture on the "Diagnosis and Treatment of Incipient Pulmonary Tuberculosis," before the Royal College of Physicians, London, some months ago, Dr. D. B. Lees said:

"The abolition of pulmonary tuberculosis is possible on two conditions and only on these conditions: First, that every practitioner shall learn how to detect the disease at its first appearance, long before any bacteriological evidence is available; and, secondly, that a method of treatment can be employed by the practitioner in the patient's own home, which will be simple, harmless, completely effective, and yet inexpensive."

The diagnosis of incipient tuberculosis is of very great importance to the patient suffering from this malady. It is of importance to the physician who does or should make the diagnosis, and it is also of very great importance to society, for, unless the diagnosis is made early, the conquest of the disease will have become a dream. It will always be impossible to control this infection unless the diagnosis of the individual cases is made very early.

A few years ago it was thought and taught that the microscope must be used, and that its use would insure the earlier diagnosis of pulmonary tuberculosis. That it did make the diagnosis earlier in many instances, is a fact. But that is insufficient. The diagnosis must be made early enough to give the patient an opportunity to live, and to give society an opportunity to protect itself from the spread of the infection.

We now know that the diagnosis should be made in most instances long before the tubercle bacillus may be demonstrated, and if not made before the germ is found, that there is already more or less destruction of tissue; that the patient is spreading infection or infectious material, and that the patient has not nearly so good a chance to live as he had before the lesion had progressed so far.

It still seems to be a fact that many physicians do not feel inclined to make a positive diagnosis of pulmonary tuberculosis until the bacillus may be demonstrated in the sputa—yet they will, without hesitation, make a diagnosis of tubercular joints, tubercular peritonitis, tubercular glands, or other tubercular lesions, without even

trying to discover the presence of the specific germ.

It is unfortunate, we think, that the general practitioner does not make the same positive diagnosis, and make it earlier in the pulmonary tuberculoses.

The diagnosis of tuberculosis other than pulmonary is made mostly as a surgical diagnosis, and in general these cases are treated mostly as surgical cases.

One cause of this condition, we think, is the little attention given to physical examination or physical diagnosis by our medical colleges.

That so many cases of pulmonary tuberculosis are not diagnosed until late is proof that the diagnosis is difficult, and it is interesting to note from the literature the various methods of making an early diagnosis as practiced by different authorities.

At the present time the Roentgen-ray enthusiast claims that in many cases the skiagraph shows a shadow, demonstrating the earliest infiltration. This has no doubt been true in many cases, but fails in many others.

During the last decade it was hoped that tuberculin could be used with certain diagnostic results.

That so many cases are not diagnosed positively by any one method, it stands that all measures should be used when possible. But in the great majority of instances, it is the general practitioner who must make the diagnosis of pulmonary tuberculosis, and must make it without other methods or equipment than those he possesses. This means that after taking recognition of such subjective and objective symptoms as he is able to obtain, he must rely greatly upon the signs of a physical examination of the chest.

Since the time of Laennec (1819) great stress has been laid upon auscultation as the principal diagnostic method. Too much value cannot well be given this method, but it must be remembered that there are cases of well established pulmonary tuberculosis which will not give a single auscultatory sign.

This being true, we must rely greatly upon the percussion note. In every case will percussion, if thoroughly practiced, give us information which we can get in no other way. Many textbooks tell us that percussion over the apex of the lung of incipient cases will give a dull note, in comparison with the normal apex; that it is in the apex that the lesion begins. Following this dictum, the doctor auscultates and percusses more particularly the areas above the level of the clavicle. We wonder if this is not one source of frequent error. Dr. Lees, in the Bradshaw lecture, asks:

> But at what part of the thorax may the practitioner hope to detect the earliest indications of an incipient pulmonary tuberculosis? He will naturally turn to the "apex" of the lung, and on consulting some of his authorities will be instructed to percuss above the clavicle to detect a disease which such authorities imagine to commence at the extreme summit of the lung and to advance steadily downwards. The progress of the disease has even been divided into "stages" in accordance with the distance downwards from the summit attained by the morbid process, the affection of the lower lobes being often ignored altogether in such classification. Yet it was pointed out more than 20 years ago, in a valuable paper by a distinguished fellow of this college, Sir James Kingston Fowler, that post-mortem examination of the precise site of the earliest tuberculous lesions of the lung shows that the tuberculous process does not begin in the summit of the lung, but at a spot about an inch and a half below the summit, from which the morbid process may extend backwards and also downwards. Sir Kingston Fowler showed that a second localization in the outer part of the upper lobe at the same horizontal level is also extremely common, and that a third early focus is very frequently present at about an inch and a half below the summit of the lower lobe on each side.
>
> If the patient is in the recumbent position on a comfortable couch which supplies an adequate resistance, and at the same time allows of complete muscular relaxation, it is quite easy by careful percussion to detect dull areas in the first and second intercostal spaces which correspond to the statements made by Sir James Kingston Fowler, if it be remembered that a distance of an inch and a half in the collapsed lung of the post-mortem room will correspond to a distance of two inches or more in the air-containing lung during life. For the posterior aspect of the thorax the patient should be sitting erect with his back to the practitioner; he should place his hands on the anterior aspect of the opposite shoulders, should bend gently forwards and relax his muscles. Careful percussion should then be practiced over the inner and the outer parts of the suprascapular fossa on each side, and also over the posterior end of the spine of the scapula and the surrounding region. In a case of incipient pulmonary tuberculosis a dull area will be found in the inner part of the suprascapular fossa, quite close to the first and second dorsal vertebrae (a region normally resonant), which corresponds anteriorly to the dull area in the inner part of the first intercostal space. Similarly, a dull area (smaller in

size) will be found in the outer part of the supra-scapular fossa, which corresponds to a dull area in the outer part of the first intercostal space. Thirdly, a very definite dull area, as large as or even larger than the area first described, will be found in the upper part of the lower lobe at the extremity of the spine of the scapula.

There are, therefore, six dull areas to be detected in the upper part of the lungs in a case of incipient pulmonary tuberculosis, two in each upper lobe and one in each lower lobe. Over these dull areas the only auscultatory phenomenon in many cases is a defect in the air-entry. Even the deepest possible inspiratory effort on the part of the patient produces very little inspiratory sound at these localities, while in the lower part of the lungs the air-entry may be much more distinct. On careful auscultation one may sometimes detect a slight crepitant sound with inspiration or with expiration also; it may or may not vanish after the patient has coughed. Occasionally the inspiration will be slightly "wavy" in rhythm; occasionally the expiration will be slightly prolonged. At this stage of the disease there is rarely any increase in the conduction of voice-sounds.

The six dull areas above described may all be present and even of considerable size, while the supra-clavicular region, corresponding to the summit of the lung, may be still very fairly resonant, though the clavicle itself may yield a dull note in the positions corresponding to the dull areas below.

These six areas at the four apices are the most important and the most easily detected part of the morbid signs of an incipient pulmonary tuberculosis. They do not represent the complete picture—far from it. But they are sufficient for the diagnosis. They are, I believe, invariably present in all cases of early pulmonary tuberculosis, though in a small minority certain areas about the angle of the scapula may become unusually definite, especially if any pleurisy develops over them.

DR. C. ST. CLAIR DRAKE.

Gov. Dunne last month completed the reorganization of the State Board of Health by the appointment of Dr. C. St. Clair Drake as a member, and the members thereupon elected Dr. Drake secretary of the Board. The State is to be congratulated upon securing the services of a man of such thorough experience and training in the difficult field of Public Health. For nineteen years past Dr. Drake has been connected with the Health Department of Chicago, as assistant chief of the bureau of vital statistics since 1896, and as editor of the *Bulletin* since the death of Dr. Frank W. Reilly.

The *Bulletin* under Dr. Reilly was a recognized sanitary authority and was quoted by an ever increasing circle of writers on public health and sanitary problems. Under Dr. Drake the *Bulletin* has become probably the most quoted of all city health publications. This is due very largely to Dr. Drake's mastery of sanitary data, to his peculiar facility of expression in epigrammatic English and to an artistic temperament which enables him to illustrate his subject with timely, original cartoons and posters. Other publications constantly reproduce his stories and cuts with or without credit, and it may truthfully be said that several reputations for sanitary acu-

DR. C. ST. CLAIR DRAKE.

men have been built up on material stolen from Dr. Drake.

One of his remarkable inventions is a device to show the necessity for ventilation, consisting of a doll house of two stories with dolls in each exhaling a thin vapor of smoke. In one room the windows are open and the air remains clear from the diffusion of the smoke, but in the room with closed windows the smoke becomes very dense. This model was shown at an exhibit of the Infant Welfare Society in the Coliseum. It has also been exhibited at numerous schools and settlements in Chicago and elsewhere, and when explained in the language of the beholders never fails to carry its lesson into the homes where it

is most needed. Everywhere it has been the center of an admiring throng. This model has been reproduced by several state boards of health and by the Canadian government, and has been the leading attraction of several sanitary train exhibitions. The doctor has invented several other models, including one that shows the high mortality of infants.

As evidence of his many sided accomplishments he has written scenarios for moving pictures which impress other sanitary facts more strongly than any text. One of these, called "Summer Babies," illustrates the care given by trained nurses to the infants in hot weather. Another film, the "Error of Omission," shows the difficulties and embarrassments a person may undergo if his birth is not legally recorded. These films have been run in moving picture theaters all over the country.

Dr. Drake's seasonal warnings, rewritten year after year with ever novel embellishments, moved one of the Chicago papers to dub him the "Paul Revere" of the Health Department.

He will be sadly missed in the Chicago Department of Health, but as citizens of the state we may all rejoice that his services receive merited recognition and that we of Chicago will still share in their benefits. Possibly some day Chicago will become wise enough to offer inducements that will keep its men of marked talent in the service of the city.

Socially, Dr. Drake has been very prominent in club circles, and has served as director and president of the Town and Country Club, to which he has devoted his great ability as an organizer of unique entertainments. On one occasion the club presented the doctor with a fine diamond ring in appreciation of his services. Both Doctor and Mrs. Drake will be greatly missed by their many Chicago friends.

CONSERVATIVE MEDICINE.

In no other field of human endeavor is conservatism more necessary than in the treatment of the sick; here the very life of the individual patient may depend upon a proper interpretation of the signs and symptoms, and a proper application of the suitable remedy. No proposition is more generally accepted as a truth.

It may be stated as a truism, also, that diagnosis is the first requisite to a proper treatment of the sick, and it is not too much to say that this does not mean simply giving a name to the disease; it must also take into account the pathology; the derangement of function and the consequent results upon the entire system. These statements of fact are so well recognized that no argument is necessary to insure their general acceptance.

The feature of this subject, however, which may meet with some opposition, and which is at the same time of the highest importance, and which furnished the inspiration for this article, is that of therapeutics as applied to the actual treatment of those who may fall into the hands of the reputable physician.

It takes but a brief retrospect in the field of materia medica to note that much disappointment has resulted from a too-ready acceptance of early statements as to the curative powers of therapeutic agents, leading, in some instances, to a wholesale condemnation of actually valuable substances, and resulting in delays in establishing them in their own proper sphere. Reference to tuberculin, and its temporary retirement in disgrace after its first sensational introduction, will readily show the necessity for a more conservative reception of any new therapeutic agent, and its thorough "trying-out" before its offer to the profession at large as a "cure." Here we found that it was not the fault of the remedy that the results were disastrous, but the ultra-radicalism which could not wait for a more definite understanding of the powers and properties of this very valuable agent. The harm resulting from this misconception of the tuberculins is felt today and might have been largely avoided by a more conservative acceptance of the remedy.

Prior to the discovery of the tuberculins the "Brown-Sequard Elixir" had its vogue for a time, and its use in many cases with no benefit, caused it to fall into the "discard"; and, though the "elixir" may have been without merit the principle upon which it was based is now proving valuable in therapy.

Another valuable remedial agent, and one comparatively new, is "salvarsan," which, while not now generally recognized as the absolute "specific" for all forms of syphilis, still maintains its position among the most valuable of our antisyphilitic remedies. That it did not meet the

claims first made in its favor is a matter of profound regret, but is no more than might have been reasonably anticipated. Its early introduction to the profession by its originator, and its exploitation by the lay press, placed the remedy in a false position. It was believed to be a "positive specific" when it is nothing more than one of the standard therapeutic agents for the treatment of this disease.

The feature of the "salvarsan case," as well as of that of "tuberculin," from which the greatest harm must result, is that it is used by unscrupulous quacks as a means of imposing upon the ignorant. The great publicity given the product in the beginning became a source of the greatest danger to the ignorant layman who read everything published and demanded the treatment; often when the presence of syphilis was not considered positive, and because in the presence of the "doubt," and the alleged "safety" of the drug, the patient felt that his own safety lay in taking the treatment. True, in some cases the peace of mind afforded justified the procedure, but this is by no means true of all cases. There can be no question but that thousands of "salvarsan" injections have been given which were not only needless, but were positively harmful. Even at this late day this remedy is still "on trial," and its actual standing as an antisyphilitic is yet unsettled. Certainly the world would not have suffered severely by a little more delay in its introduction, and it is equally certain that many persons would have been far better off both financially and physically had its commercial exploitation been tempered with more moderation in statements concerning its value, and more honesty concerning its dangers.

Radium has been in the "limelight" recently, and its supposed therapeutic powers have been the disastrous results which are the invariable through the press will be largely responsible for published far and wide both in the lay press and in medical journals, but its actual potentialities as a cancer cure are by no means definitely established, though it is admittedly of some value in certain forms of cancer. That it is a certain "cure" is not believed by its most sanguine advocates, and its position as a therapeutic agent can not be known for some time, probably not for years, and in the meantime the frauds perpetrated in its name will be so numerous, and their baneful effects so far-reaching that the damage will more than offset the good derived from its legitimate use. The credulity which transforms the most simple substances into something bordering on the supernatural may well grasp at the more tangible, but not less marvelous substance called "radium," and set its powers and properties far beyond the limits which scientific research will finally establish. Even now we see evidence of attempts to take advantage of this credulity, and note the many forms of radio-active substances offered as remedial agents. Mineral waters, practically void of medicinal properties, and valuable chiefly because of the natural environment of the springs from whence they come, are claimed to possess "radium" in solution, and hence to have boundless therapeutic properties. Such "springs" will count their "victims" by the thousands before the truth will be known. Waters said to be "charged" with radium will be sold at fabulous prices, and the use of them will result in delays that are dangerous.

Here, again, the premature publicity given sequence when confidence in any special therapeutic agent has been misplaced. Here, also the public will demand "radium" treatment in cases of pronounced cancer, as well as in many other forms of malignant and non-malignant tumor, and the doctor who looks upon a patient as a "valuable asset" only, will yield to the importunity and supply him with the "so-called" "radio-active" water. In such cases the honest physician will be found to be an "old fogy" because he does not approve of the "radium treatment." The class of cancer patients in which operation might give some measure of relief will practically all suffer if subjected to the delusions of this new therapy.

Progress in medicine is to be commended in the highest degree, and especially do we need to add to our therapeutic armamentarium, and to this end a careful system of research must be maintained, but we should still be slow to adopt new therapeutic agents of doubtful and uncertain properties.

No statement could be more fitting for application to this subject than the saying of the apostle who said, "Prove all things and hold fast that which is good." And, by the same token,

there are now a large number of articles in our materia medica which have been proven to be "good," and until we know of something better we may safely employ them, rather than take the word of the commercialist, or the enthusiast, that we have "positive cures" for incurable diseases.

WHAT'S THE MATTER WITH MINNESOTA?

Last month we called attention to the efforts being made by the druggists to secure the amendment of the Harrison National Antinarcotic Bill in such a way as to promote their own selfish interests at our expense. While these amendments were introduced by Senator Knute Nelson of Minnesota, there is no longer any question as to their authorship. In a letter to a physician, published in the official *Bulletin of the Chicago Medical Society*, Senator Nelson says: "I offered these amendments at the request of Mr. C. H. Huhn, of Minneapolis, secretary of the Minnesota Retail Druggists' Association." Mr. Huhn is also a member of the executive committee of the National Association of Retail Druggists, and the official organ of that body has not taken the pains to deny the fact, now generally recognized and openly admitted by prominent members, that it is the purpose of this organization to force the passage of these or similar amendments intended to embarrass and harass the physician.

Illinois recognizes the situation and has taken action. The Chicago Medical Society has passed strong resolutions, which were published in this journal last month. The Legislation Committee of the Illinois State Medical Society has placed the situation before the officers of the county societies and suggested immediate action. If there is to be a fight on this matter, or any other affecting the interests of the thousands of Illinois physicians and the people whom they serve, we are ready for it.

Indiana has also fallen into line. Note the following from the *Journal of the Indiana State Medical Association* for April:

"A physician who is now a druggist and a member of various pharmaceutical associations says that he knows positively that it is the intention of the influential men in the state and national pharmaceutical associations to bring about legislation which will compel universal prescription writing. If this is true, the sooner the rank and file of the medical profession awakens to the necessity of concerted action to preserve their rights, the better it will be for them."

Now, what's the matter with Minnesota? Thus far we have seen no word of protest from the medical journals of that state. Senator Nelson is supposed to represent the physicians of Minnesota as well as the druggists of Minnesota. Some one authorized to speak for the medical profession of his state should make it plain to him that efforts of this kind on the part of the druggists are exceedingly offensive to every physician. We believe that when Senator Nelson fully understands the situation he will see the folly of attempting to force an issue of this character. The medical profession wants clean antinarcotic legislation, and has unanimously supported the Harrison bill, but it is prepared to defend its own rights. Minnesota physicians should tell Senator Nelson what they think of his amendments.

California, Kansas, Ohio, Maine and Nevada, too, should wake up. In each of these states drastic laws curtailing the rights of physicians have already been enacted. The viciousness of some of this legislation is well illustrated in Nevada, where under the law a physician unless he is registered as a pharmacist cannot administer medicine hypodermically. Some of the proposed legislation would prohibit veterinary surgeons administering needed medicines. Also it would prevent dentists administering remedies for relieving tooth ache.

We are persuaded that the better element among the pharmacists will refuse to be led by agitators, posing as leaders, into a policy which is sure to be disastrous to them. These men must realize that the pharmaceutical profession has faults enough of its own. Let them devote their undivided and earnest attention to those faults and be sure that they are all corrected before they attempt to legislate for physicians.

Every physician in Illinois should file a protest against the passage of the Nelson amendments with his congressman as well as with Senators Lewis and Sherman. Also, he should be prepared to fight any other offensive legislation of this character that may appear in Congress or in his state legislature.

ILLINOIS STATE MEDICAL SOCIETY.

CHARLES J. WHALEN, PRESIDENT, CHICAGO.

THE SIXTY-FOURTH ANNUAL MEETING OF THE ILLINOIS STATE MEDICAL SOCIETY, DECATUR, MAY 19 TO 21, 1914.

FIRST DAY—TUESDAY—AFTERNOON.

2:00—Surgical Clinics of the Section on Eye, Ear, Nose and Throat, at the St. Mary's Hospital.

2:30—Call to order of the Society in General Session by the president, Chas. J. Whalen, Chicago, in the Christian Church.

Report of the chairman of the committee on arrangements, Everitt J. Brown, Decatur.

3:00—Call to order of Secretaries' Conference, Christian Church, by E. B. Owens, president, Dixon.

FIRST DAY—EVENING.

8:00—Call to order of House of Delegates, in the gymnasium of the Y. M. C. A., by President Chas. J. Whalen.

SECOND DAY—WEDNESDAY—MORNING.

9:00—Call to order of Sections One and Two for the reading and discussion of the papers of the program in Christian Church.

9:00—Call to order of the Section on Eye, Ear, Nose and Throat, in the gymnasium of the Y. M. C. A., by Harry Woodruff, chairman, Joliet.

9:00—Call to order of the Section on Public Health and Hygiene, in the Assembly room of the Y. M. C. A. Building, by J. W. VanDerslice, chairman, Oak Park.

12:30—Adjournment for luncheon.

SECOND DAY—AFTERNOON.

2:00—President's Address, by Charles J. Whalen, Chicago.

2:30—Call to order Section on Eye, Ear, Nose and Throat.

2:30—Oration on Surgery, by Joseph Rilus Eastman, Indianapolis.

4:00—Meeting of Medical Legal Committee in the Assembly Room of the Y. M. C. A., Charles J. Whalen, Chicago, and A. H. Arp, Moline, Chairmen.

5:30—Adjournment.

SECOND DAY—EVENING.

7:30—Special Vaudeville Entertainment at the Empress Theatre, free to members and ladies.

THIRD DAY—THURSDAY MORNING.

9:30—Call to order of Sections One and Two for the continuance of the program.

11:00—Oration on Medicine, J. P. Sedgwick, Minneapolis.

12:30—Adjournment for luncheon.

THIRD DAY—AFTERNOON.

1:30—Re-convening for continuation and completion of program.

4:00—Call to order in general session by the President to receive the report of the House of Delegates.

Induction of President-elect.

5:30—Final adjournment.

The Section on Eye, Ear, Nose and Throat will hold surgical clinics at St. Mary's Hospital Tuesday afternoon, May 19th at 2 o'clock.

The St. Mary's Hospital is about five blocks distant from the center of the city.

This Section will also have a banquet on the evening of May 19th, at 6:30 o'clock, at the St. Nicholas Hotel.

A fine program has been arranged which assures the best of entertainment.

ENTERTAINMENT OF THE LADIES.

WEDNESDAY, MAY 20.

1:00—Luncheon for the ladies at the Country Club.

3:00—There will be an automobile ride for the ladies, starting from the club grounds.

6:30—Luncheon, Jefferson Medical College, at the Country Club.

For reservations write to Dr. Ben Bachrach.

May 20th at 12:30—Luncheon, Northwestern Medical College, in the Decatur Club Rooms. Dr. C. E. Woodward in charge of arrangements.

May 20th at 12:30—Rush Medical College luncheon at the St. Nicholas Hotel. Dr. M. P. Parrish has charge of arrangements.

May 20th at 12:30—University of Michigan luncheon at the St. Nicholas Hotel. Dr. C. Martin Wood in charge of arrangements.

OFFICIAL PROGRAM.

SECTION ONE.

George Parker, Chairman, Peoria.
C. G. Grulee, Secretary, Chicago.

SECTION TWO.

Frederick A. Besley, Chairman, Chicago.
E. M. Sala, Secretary, Rock Island.

WEDNESDAY, MAY 20—9 A. M.

The Forms and Method of Operation (Suprapubic) of Hypertrophied Prostrate, Daniel N. Eisendrath, Chicago.

Vaccine Treatment of Hay Fever, by Karl K. Koessler.

Eleven Years' Report of the Treatment of Appendicitis by the Ochsner Method, J. B. Bacon, Macomb.

The Technic of Applying Heat in the Treatment of Inoperable Carcinoma of the Uterus. J. F. Percy, Galesburg.

Displacements of the Colon, Carl E. Black, Jacksonville.

The Relation of Precordial Pain to Heart Disease, Joseph M. Patton, Chicago.

Imperforated Anus with Report of Cases, Marvin H. Smith, Sherrard.

WEDNESDAY AFTERNOON AT 2:00.

President's Address, Charles J. Whalen, Chicago.

Oration on Surgery, Experimental and Clinical Studies of Colon Stasis, Joseph Rilus Eastman, Indianapolis.

Symposium on Joint Diseases.

Pathology, David J. Davis, Chicago.

Roentgenology, J. T. Case, Battle Creek, Mich.

Medical Aspect, Frank Billings, Chicago.

Surgical Aspect, John B. Murphy, Chicago.

THURSDAY, MAY 21—9:00 A. M.

Cerebral Edema (wet brain) in Chronic Alcoholism, Arthur E. Beifeld and C. E. Sceleth, Chicago.

The Stammering Child, Elmer L. Kenyon, Chicago.

The Psychoneuroses and Their Treatment, Frank P. Norbury, Springfield.

The Practical Significance of the Adrenal Glands, R. G. Hoskins, Chicago.

Bone Transplantation into the Spinous Processes of the Vertebrae for the Cure of Pott's Disease, with a Report of Cases, Charles M. Jacobs, Chicago.

The Role of the Pylorus in the Etiology, Diagnosis and Treatment of Chronic Gastric Ulcer, J. C. Friedman and W. W. Hamburger, Chicago.

Modern Gastroscopy with Demonstration of the Sussman Gastroscope, A. A. Goldsmith, Chicago.

Oration on Medicine, J. P. Sedgwick, Minneapolis.

THURSDAY AFTERNOON—2:00.

Present Status of the Treatment of Tuberculosis, J. W. Pettit, Ottawa.

Radium, Its Use and Limitations in Skin Diseases, Frank E. Simpson, Chicago.

The Dermatoses of Pregnancy, E. A. Fischkin, Chicago.

Axillary, Arterio-Venous Anastomosis with Report of Cases, Don W. Deal, Springfield.

My Experience with Intravenous Injection of Neosalvarsan, Evlan Sargent, Chicago.

Further Advances in our Studies of Syphilis, B. C. Corbus, Chicago.

SECTION ON EYE, EAR, NOSE AND THROAT.

Gymnasium of Y. M. C. A. Building.

Harry Woodruff, chairman, Joliet.

C. B. Welton, secretary, Peoria.

Preservation of the Antral Capsule in Operation in Uncomplicated Acute Mastoid Suppuration, Norval H. Pierce, Chicago.

Discussion opened by Louis Ostrom, Rock Island.

Cases Illustrative of the Interdependence of Oto-Laryngology, Rhinology and Dentistry, Joseph Beck, Chicago.

Discussion opened by A. I. Porges, Chicago.

Treatment of Senile Cataract, W. A. Fisher, Chicago.

Discussion opened by Oliver Tydings, Chicago.

The Cataract Operation—Advantages and Disadvantages as Practiced by Col. Henry Smith of India, W. L. Noble, Chicago.

Immature Cataracts, R. J. Tivnen, Chicago.

Indian Operation for Cataract, Watson W. Gailey, Bloomington.

Laryngeal Topography, J. A. Cavanaugh, Chicago.

Discussion opened by J. Holinger, Chicago.

Concerning a New Sign in Exophthalmic Goiter. A Preliminary Report, George Suker, Chicago.

Discussion opened by A. L. Adams, Jacksonville.

Removal of Tonsil by Knife Dissection, O. T. Freer, Chicago.

Discussion opened by T. W. Lewis, Chicago.

The Function of the Faucial Tonsils and Indication for their removal, C. F. Burkhardt, Effingham.

Discussion opened by A. M. Corwin, Chicago.

The Recognition of Chronically Infected

Faucial Tonsils, Geo. E. Shambaugh, Chicago.

Heredity with Reference to the Eye and Ear, J. C. Fisher, Decatur.

Does Ophthalmic Science in the United States Demand an Endowed School of Refraction? J. Whitefield Smith, Bloomington.

Discussion opened by A. L. Adams, Jacksonville.

Metastatic Carcinoma of the Choroid, F. W. Kettlestrings, Francis Lane, Chicago.

Discussion opened by George Suker, Chicago.

The Prognosis in Squint, Thomas Faith, Chicago.

The Importance of the Early Treatment of Strabismus in Infants, W. R. Fringer, Rockford.

Discussion opened by J. Sheldon Clark, Freeport.

The West Intra-nasal Resection of the Tear Sac for Dacryocystitis, Phlegmon, or Stenosis, J. Sheldon Clark, Freeport.

Discussion opened by Norval H. Pierce, Chicago.

Report of a Case of Hypophyseal Tumor, Emory Hill, Chicago.

Discussion opened by A. E. Halsted, Chicago.

Statistics at the School for the Blind at Jacksonville, A. L. Adams, Jacksonville.

Conservation of Vision, T. A. Woodruff, Chicago.

Discussion opened by E. E. Edmondson, Mount Vernon.

Indications for Operative Interference in Glaucoma, H. S. Gradle, Chicago.

COUNTY SECRETARIES' CONFERENCE.

CHRISTIAN CHURCH.

E. B. Owens, president, Dixon.

H. F. Bennett, vice-president, Litchfield.

T. D. Cantrell, secretary, Bloomington.

Needs and Purposes of The Illinois State Medical Society, Chas. J. Whalen, Chicago.

Booster Sermon, Charles W. Carter, Clinton.

The Secretary's Wireless S-O-S, E. W. Oliver, Peoria.

Hobbies, H. C. Blankmeyer, Springfield.

SECTION ON PUBLIC HEALTH AND HYGIENE.

Assembly Room of Y. M. C. A. Building.

J. W. VanDerslice, chairman, Oak Park.

J. A. Poling, secretary, Freeport.

Certified Milk, R. R. Ferguson, Chicago.

Medical Inspection of Dairy Farm Employees, Julia D. Merrill, Chicago.

Typhoid Fever in Rockford, Prof. Paul Hansen, engineer, State Water Survey, Urbana. C. E. Crawford, Rockford.

Possible Functions of Municipal Laboratories, Prof. Edward Bartow, director State Water Survey, Urbana.

Future of Preventive Medicine, John A. Robison, president State Board of Health, Chicago.

Sanatoria of New Mexico, W. T. Brown, Watrous, N. M.

Prevailing Mistakes in the Anti-Tuberculosis Movement, George T. Palmer, Springfield.

Anti-Spitting Signs and the Control of Expectoration, A. Gehrmann, Chicago.

RUSH ALUMNI, ATTENTION!

Come to the Decatur meeting of the Illinois State Medical Society to be held May 19-21. In addition to a good society program there will be a "Get Together" of Rush men, which bids fair to be the best state alumni reunion of record.

You will be sorry if you miss it.

ARTHUR M. CORWIN, *President.*

JOHN RITTER, *Chairman Alumni Reunions.*

CHAS. A. PARKER, *Secretary.*

The Illinois State Surgical Society will hold its first annual meeting at the Y. M. C. A. building in Decatur, Tuesday, May 19, at 10 a. m. Dr. Robert H. Ferguson, of East Orange, N. J., will read a paper on "Some Psychic Factors in Anesthesia." Dr. C. E. Humiston, of Chicago, Dr. Hamilton, of Mount Vernon, Dr. Buckaster, of Effingham, and many other prominent surgeons throughout the state will talk on organizataion. All those interested in special or general surgery are invited to attend this meeting.

NOTICE.

I am not attorney for American Medical Defense Association, and do not represent it in any way. ROBERT J. FOLONIE.

HOTELS AT DECATUR.

St. Nicholas, Headquarters.	Kraft
Decatur	Arcade
Brunswick	Angle
Walston	St. James

GETTING HIS

—Courtesy Chicago Daily News.

Auto Sparks and Kicks

VULCANIZERS.

B. W. and O. W., in answer to inquiries relative to the value of inexpensive vulcanizers:

There are a great many vulcanizers on the market, but experience has taught that where vulcanizing is done without the use of steam it frequently burns the tires.

It has been demonstrated to our satisfaction that steam is the only scientific and safe method to use. It distributes the heat evenly to every portion of the repair. There are many inexpensive steam vulcanizers on the market. The only one the writer has so far tested is known as the Positive, manufactured by the Positive Supply Company, Davenport, Iowa, which does the work as satisfactorily as can be done by more expensive instruments.

One writer, in commenting upon the general ignorance of the value of petroleum and its products in the arts and industries, says that "If 100 people were asked to name the most valuable of all the riches taken from the earth, few indeed would be the answers giving petroleum an important place. Yet, coal and iron excepted, no other mineral product can rival petroleum in real value to all the peoples of the earth, without regard to class."

Gasoline promises to remain one of the chief if not the foremost source of energy in the propulsion of motor-driven vehicles for many years to come, in spite of the dire prophecies of its rapid extinction and the threatened inroads of cheaper fuels. Of the proposed substitutes several, kerosene, motor spirits, toppings and others, come from the same source as does gasoline. To the average motorist petroleum means simply the raw form of gasoline and cylinder oils; very few realize the importance of its other products to humanity as a whole.

SUGGESTIONS FOR HANDLERS OF GASOLINE, ETC.

Don't keep kerosene in a glass can. You are liable to drop and break it near a stove or gas jet and set the house and yourself afire.

Don't keep the kerosene near a stove or in a hot room. It is liable to form gas and if the can is tightly closed it will explode.

Don't use kerosene to light a fire. There is liable to be a hot coal left over from the last fire, if so, it will immediately form gas and explode.

Don't ever use kerosene to start a slow fire, it will form gas and explode before you can get away.

Don't fill lamps or oil stoves after dark. If you must fill them after dark, never do so while they are lighted. If the fire runs up the stream of oil into the can, the can will explode.

Don't leave the oil stove or lamp burn if you are going to leave the room or house for some time. The wick is liable to turn up higher and higher until the overheated lamp or stove explodes.

Don't use the same style can for kerosene and gasoline (prevent mistakes). Paint the gasoline can red, fasten a tag to the top of the can, plainly marked gasoline.

RUBBER.

The Amazon district in South America, the Federated Malay states, Africa and Mexico supply the world with rubber. That which comes from the district around Para, Brazil, is of the best grade, and no better rubber than up-the-river-Para has yet been produced. Ceylon, during the last few years, has come to the front as a great rubber-producing state. Hundreds of thousands of acres are under cultivation and the quality of gum is very high. Rubber from Africa and Mexico fall lowest in the scale.

STEAMING RADIATOR

The water capacity of almost all radiators is not sufficient to prevent violent steaming when the engine is run for any considerable time on slow gear-speed connection.

Society Proceedings

ADAMS COUNTY.

The Adams County Medical Society met in regular monthly session on Monday, April 13, at the Chamber of Commerce rooms, Quincy. Luncheon was enjoyed at the Hotel Newcomb.

The greater part of the morning was devoted to reading of the testimony taken at the trial of Dr. J. E. Miller, against whom charges of unprofessional conduct had been preferred by Dr. Otis Johnston. At the conclusion of the reading a ballot was taken with the result that 39 of those present thought Dr. Miller guilty and 11 felt he was innocent. This was followed by another ballot to determine the punishment due the one found guilty, and resulted in 39 favoring expulsion and 11 against it. Therefore, Dr. Miller was expelled from the society.

The afternoon was taken up with the scientific program. Dr. W. S. Knapheide read a very interesting paper relative to the business side of the profession. A general discussion followed, which brought out many good points and proved that the majority of physicians are poor business men.

ELIZABETH B. BALL, Secretary.

CLARK COUNTY.

Society met at 2 p. m., Feb. 12, 1914, in Drs. Bradley's office, Marshall, Ill.

Members present: McCullough, Johnson, Rowland, Burnside, S. C. Bradley, R. H. Bradley, Pearce, Prewett, Mitchell, Weir, Haslitt and Ryerson.

Mitchell reported a case of a typical pneumonia which elicited an interesting discussion.

Burnside reported a labial hematoma a few hours after labor incised 2 days later; good recovery; tumor was some 4 inches in diameter. S. C. Bradley reported similar case; small tumor suppurated in few days, fever dropped and case recovered.

Rowland reported an epiphyseal separation of humerus.

McCullough reported a facial paralysis from forceps delivery recovered in few days.

The paper of the evening was presented by L. H. Johnson on "Prevention and Spread of Contagious Diseases."

G. T. Rowland led the discussion, followed by an extended and valuable discussion participated in by all present.

The following resolution was unanimously adopted:

WHEREAS: Germany and other nations have compulsory vaccination and have practically quit having smallpox, and whereas: It is possible for Illinois and the United States to do the same, and

WHEREAS: All infectious diseases are preventable and are evidence of ignorance or neglect on the part of some one, therefore, be it

Resolved by Clark County Medical Society that we favor compulsory vaccination of all and the making and enforcing of laws establishing the accepted methods and means of preventing the infectious diseases.

President McCullough appointed the following as a program committee for the ensuing year: Ryerson, Rowland and Johnson.

Plans for scientific work were discussed that the committee might get the ideas of the members. The quiz instead of papers, the securing of foreign talent, the exchange of papers with other county societies, etc., were considered.

L. J. WEIR, Secretary.

Regular Meeting April 9, 1914.

Society met in the New Archer House at 2 p. m. after a pleasant time together at the dinner table.

Members present: McCullough, Johnson, Burnside, S. C. Bradley, Mitchell, Weir, Marlow, R. H. Bradley, Haslitt, Prewett, Ryerson.

Mitchell reported a case of sore throat with membrane, though not yet plainly diptheritic. Other cases of membranous sore throat were reported and discussed by several members.

Marlow reported a case of placenta previa. Placenta was expelled fifteen minutes before the child was born.

McCullough presented the subject for the meeting "Dislocation of Shoulder and Elbow Joint" in a clear and interesting paper, giving anatomy necessary to know especially to enable one to treat dislocations, dwelling most upon reduction and treatment. All members participated in the discussion which brought out many experiences and practical points in reduction of the different dislocations of these joints.

The secretary-treasurer's annual report was read and approved and a vote of thanks extended the secretary-treasurer for his labors the past year.

The interest taken in the work of the society has been good and the good accomplished has been much.

The program committee reported the following program for the year and after thorough discussion it was adopted:

Program of the Clark County Medical Society from May 14, 1914, to April, 1915:

May 14, 1914—"How Shall We Feed the Baby?" R. A. Mitchell. Discussion led by E. M. Duncan.

June 11, 1914—"Blood Pressure and Its Significance," F. Buckmaster, Effingham, Ill. Discussion led by Dr. Anderson. "Vaccine and

Serum Therapy," Joseph Hall. Discussion led by L. J. Weir.

July 9, 1914—"Chronic Constipation, Causes Local and General, Complications and Management," J. W. Marlow. Discussion led by R. H. Bradley.

August 15, 1914—Outing and fish fry on the banks of the Wabash, for members and their families, under supervision of L. A. Burnside.

September 10, 1914—"Significance of Pain as a Guide to Diagnosis and Treatment," J. Y. McCullough. Discussion led by G. T. Rowland.

October 15, 1914—"Practical Laboratory Diagnosis," C. C. Holman, Effingham, Ill. "Materia Medica and Therapeutics," C. D. Ryerson. Discussion by all members.

December 10, 1914—"Malignant Tumors," S. C. Bradley. Discussion led by P. P. Haslitt.

February 11, 1915—"Tuberculosis," C. J. R. Wettstein, Effingham, Ill. Discussion led by R. B. Boyd.

April 14, 1915—"Perineal Lacerations," T. H. Lewis. Discussion led by G. W. Prewett.

Upon motion it was voted to meet in Marshall except when invitations are received and accepted to meet in other towns.

The following officers were elected for the ensuing year: President, L. A. Burnside; vice-president, P. P. Haslitt; secretary-treasurer, L. J. Weir; delegate, J. Y. McCullough; alternate delegate, L. A. Burnside; censors, R. H. Bradley, Joseph Hall, L. H. Johnson.

L. J. Weir, Sec'y.

COOK COUNTY.

Chicago Medical Society.

Regular Meeting, March 25, 1914.

1. The Present Status of the Treatment of Surgical Tuberculosis, with Demonstration by Lantern Slides and Patients. Emil Beck.

Discussion. Bayard Holmes, John Ritter and Clarence Wheaton.

2. Inflammatory Tumors. Alexander Wiener.

3. Welfare Work in the Iron and Steel and Allied Industries, with Special Reference to Fatigue. Thomas Darlington, New York.

Regular Meeting, April 1, 1914.

1. Standpoint of Association of American Medical Colleges. F. C. Zappfe.

2. The Present Limitations of the Illinois State Medical Practice Act, from the Standpoint of the Illinois State Board of Health. J. A. Robison.

3. Standpoint of Council of Medical Education of the American Medical Association. A. D. Bevan.

Discussion. J. D. Robertson, N. P. Colwell and A. M. Corwin.

Joint Clinical Meeting, April 8, 1914.

The meeting of April 8 was a joint clinical meeting between the Chicago Medical Society, Chicago Urological Society, Chicago Dermatological Society and the Northwest Branch at the Cook County Hospital.

1. Presentation of Cases of Skin Lesions, E. A. Fischkin, Northwest Branch.

Discussion. David Lieberthal, Chicago Dermatological Society.

2. Presentation of Pathological Material and Exhibition of Instruments. R. H. Herbst, D. N. Eisendrath, G. Kolischer and H. L. Kretschmer.

Regular Meeting, April 15, 1914.

1. Report of Two Cases of Post Partum Inversion of the Uterus, with Discussion of the Pathogenesis of Obstetrical Inversion. W. C. Jones.

Discussion. C. S. Bacon, N. Sproat Heaney.

Chicago Ophthalmological Society.

A regular meeting was held February 16, 1914, with the President, Dr. Wesley Hamilton Peck, in the chair.

PARTIAL ALBINISM; EYES ONLY AFFECTED.

Dr. W. E. Gamble reported a case of partial albinism of the eye without involvement of the hair or skin. He first saw the patient at eight months of age, at which time patient seemed to be blind. There was sufficient pigmentation of the irides to give to the casual observer the suggestion of brownish color. Lateral nystagmus is present. The hair, when first seen, was light brown; now it is quite dark. When sixteen months old, his error of refraction-hypermetropia, was corrected and the lenses ground from number 3 London smoked glass. His vision has gradually improved so that now, at twenty-seven months, he plays with small objects and with other children. Judging from the darker color of the iris at the present time, he has no doubt that this improvement is partly due to gradual deposit of pigment since birth.

TWO GENERATIONS OF CASES OF RETINITIS PIGMENTOSA IN WHICH HEREDITY AND CONSANGUINITY ARE PROBABLY ETIOLOGIC FACTORS.

Dr. W. E. Gamble reported the case of Mrs. H., 27 years of age, with retinitis pigmentosa. Her father and his brother and sister are both victims of the same disease. The grandfather of Mrs. H., married his first cousin, and the father of Mrs. H. married his first cousin.

His reason for presenting these cases is that in America it is rare to see two generations having the disease and having a clear history of consanguineous marriage. In the isolated mountain districts of southern Europe this condition is not so uncommon.

It is sometimes very difficult to distinguish widely diffused superficial choroiditis with pigmentation of the retina and atrophy of the disc, from this disease.

The history of syphilitic retino-choroiditis with pigmentation of the retina and atrophy of the disc along with atrophic choroidal patches and pigment under the retinal vessels clears the diagnosis.

DISCUSSION.

Dr. J. E. Colburn said he failed to note in Dr. Gamble's report of albinos whether there was an aberration of the color sense. Two cases that he had seen occasionally for twenty years, ever since they were children, a brother and sister, had complete albinism. They darkened a little as they grew older, but they had absolutely no color sense. With the worsteds they would pick out the colors as to color value, and classify them, but they had no sense of color perception. This had been maintained for the last fifteen or sixteen years. They had not improved in their color vision. With them he used a very dark fenestrated glass, and their refraction was put into a small opening so that they have been able to read and use the eyes with comfort. Vision was very good; they had very little nystagmus, he thought none at all in their later life. After they had worn correction for a number of years the nystagmus they had slightly in childhood disappeared.

In the other cases in which there was partial albinism they were absolutely blind to green, but with blue or yellow, or the combinations of blue or yellow, or the combinations of red or black or the grays, they had very good color perception. In a more recent case he found absolutely accurate color perception: Vision was a little low, but not materially so. Nystagmus is usually present, but not necessarily so.

Consanguinity he thinks holds in albinism as well as it does in the opposite condition. He gathered fifteen cases, and in eight of the fifteen there was infant consanguinity, and three cases dated back to two generations, the first albinism occurring in two generations prior to the one he saw.

AN ANOMALOUS NERVE HEAD WITH GOOD VISION.

Dr. Michael Goldenburg reported the case of a male negro, aged 19, in which there was an apparent absence of both discs, with marked pigmentation in the region of the nerve head. The fields of vision for color and objects were very irregular, while the acuity of vision was almost normal. There was a history of eye trouble for the past six years, consisting largely in inability to read for any length of time without pain and excessive lacrimation. About five years ago the patient had glasses fitted by an optician. Examination of the eyes last October disclosed an alternating squint present with the right acting as the fixed eye, although vision was better in the left. Patient is able at this time to see with his right eye 20/50 and with his correction 20/25.2. The tension, cornea, anterior chamber and pupillary reaction are all negative. The iris is heavily pigmented and dilates perfectly. The lens and vitreous are also negative. Examination of the fundus reveals the following anomaly—an attempt to locate the disc as a preliminary step to a more detailed examination proved futile. Tracing the vessels from the periphery to the point of convergence did not seem to help in locating anything that might resemble a disc. However, at the point where the vessels apparently come together, and where the nerve head should be, a very small intensely white spot was found. This spot could not be defined. The vessels appeared negative in every respect. The retina is normal with the exception of a marked pigmentation in the region of the nerve head, but gradually assumes a lighter shade toward the periphery. The fields of vision are not markedly contracted, but the marginal lines appear serrated in outline.

Dr. Clark W. Hawley spoke of a case he exhibited before the society a number of years ago. There are one or two differences between the case of Dr. Goldenburg and his, in that there was almost no pigmentation at the disc. The blood-vessels seem to come out more as in the normal disc. Around the blood vessels the retina seems to be somewhat darker than the rest of the fundus. In one eye of this patient there was a streak which looked like a hyaloid membrane. Vision was fairly good. There was some discussion at the time he exhibited the case as to whether it might be one of optic neuritis. A very careful examination of the case a number of times did not disclose anything which would point to an optic neuritis. In his case there was an absence of the disc. In Dr. Goldenburg's case the pigmentation he thought would indicate the formation of a disc with the pigment on top of it, but in his own case it was almost nil.

Dr. Thomas Faith said that several years ago he reported in the *Ophthalmic Record* two or three cases similar to the case reported by Dr. Goldenburg. There was no pigmentation, but he thought it was proper to classify it under absence of the disc. The cases resembled very closely those of optic neuritis; the disc was swollen, and there was a difference of three or four diopters between the summit of the nerve head and the surrounding fundus. One of the cases had a vision of six-sixths (6/6) in one eye, and less than that in the other. He did not remember the details, but in all cases he was able to watch for

many months; he was satisfied he had a congenital anomaly to deal with. Taking the field a number of times showed a slight variation. There was no enlargement of the normal blind spot, and no evidences of inflammation, exudation, or hemorrhage in the retina or nerve head. One of the cases he has been able to see within the last few months and the condition is identical with what it was a number of years ago. In the myopic case the myopia had progressed some. There was three-quarters of a diopter more of myopia than there was when he reported the case, yet there is no evidence of change at the margin of the disc.

Dr. Faith referred to other cases in the literature on this subject.

Dr. Goldenburg, in closing the discussion, stated that in the *Ophthalmic Record* for 1901 he saw a report of Dr. Hawley's case; that vision was bad and no improvement with glasses. The report at that time was incomplete and he could not get much information out of it. Dr. E. V. L. Brown in discussing the case was unable to find any evidence of the disc, but the vitreous changed quite a bit. He thought there were the remains of the vitreo-glial structure. As to the absence of the disc, he assumed the attitude of an embryo ophthalmologist when he said it was hardly possible to have absence of the optic disc without vision. There was a case in an adult of absence of the optic disc, but he was totally blind.

In regard to his own case he was in hopes someone would tell him something about the fields and clear up the point of how we were able to account for these constricted fields and serrated edges of the outline.

THE INTRA-CAPSULAR CATARACT OPERATION IN IMMATURE CATARACT.

Dr. William A. Fisher pointed out two serious objections to the intra-capsular operation: First, the want of an experienced assistant, and, second, the great danger of loss of vitreous. These two objections could be overcome, and he mentioned a plan of eliminating both of them, or at least robbing them of most of their dangers. The want of a properly trained assistant has always been considered sufficient cause to deter many good operators from attempting the intra-capsular operation. He does not underestimate the value of a good assistant, but he thinks his double lid hook will simplify the assistant's part of the operation, and Colonel Smith believes with him that an assistant can be trained with this instrument in a comparatively short time to successfully care for the lids. With the proper assistant some operators might be bold enough to attempt the removal of a lens in its capsule. However, even if a skilful operator with a good assistant attempted the removal of a lens in its capsule before he knew how to introduce the Smith spoon in impending or actual loss of vitreous, he would soon meet with disaster.

It is not a difficult matter after cocainization of the patient or a number of them to become familiar with the lid hook, not only holding the lid away from the eye when expelling the lens, but also during the incision and the iridectomy. There are only two positions in which the lid should be held and they should be thoroughly mastered by both operator and assistant before beginning so important an operation as the removal of the lens by any method.

There are many eye speculums that will hold the lids open in a proper manner when the patient is not nervous, or made so by a little pain, but no one can tell when a patient is going to squeeze his lids and make pressure upon the eyeball. If a surgeon must use an eye speculum to make the incision he should not use one while the lens is being delivered. If specula must be abandoned for the delivery of the lens, the author believes they should not be used at all during any part of a cataract operation. He has not used an eye speculum when operating for cataract for the past ten years.

The Smith spoon is not as easily placed behind the lens with the left hand as some may believe, but it is possible to get this tecnic by operating upon animal's eyes. After a very large experience with the intra-capsular operation there was one thing he feared when he left India, and that was the introduction of the spoon to deliver the lens in impending or actual loss of vitreous. He operated upon more than 100 eyes before he was permitted to use the spoon, and after that the loss of vitreous was not great enough for him to become proficient in the use of the instrument. When he returned to Chicago he made himself familiar with the introduction of the Smith spoon by practice on pig's eyes placed in a mask. The more skilful the operator in delivering the lens, the less often will he be called upon to use the spoon, but he must be prepared to use it at any time.

Dr. Fisher then described the method for operating on cataracts.

As to iridectomy, the method employed by Smith is not as simple as it appears, but any good operator should be able to do it with a little experience. It is not usually necessary to introduce the iris-forceps into the eye, and if the ophthalmic surgeon insists in putting the iris forceps into the eye he will be rewarded by some injured capsule which will prevent the removal of the lens in its capsule.

Some ophthalmic surgeons recommend preliminary iridectomy in certain cases, and he has in a previous paper recommended a preliminary iridectomy in all cases. Since his experience in India he feels that a preliminary iridectomy would be of advantage especially to those who do not operate frequently.

Experience only can teach one how much pressure to make in delivering the lens, but enough must be maintained to keep the corneal wound full of lens, otherwise vitreous will escape. The lens being partially expelled and hanging in the wound is extracted with the hook.

As to the toilet, the lid is held up and away from the eye by the double hook. The patient usually looks up which position aids replacement of the iris. Should

the patient not look up he will do so on request. It is not necessary but dangerous to have the patient look down after the incision has been made. The iris is tucked back into the edges of the corneal wound with the Smith spatula, and the eyes closed. Any clean dressing that suits the operator will be proper, but Smith prefers to cover both eyes with a light dressing after the lashes have been covered with yellow oxide of mercury, one grain to the ounce. Whatever dressing is used no pressure should be applied.

No matter what after treatment is followed, the result will usually be good if the operation has been performed without accident. The less after treatment the better. The dressing need not be removed for nine days unless the patient complains, and usually he is ready to be discharged at the first dressing.

Should an immature cataract be operated upon? If the objections to the removal of the lens in its capsule can be overcome, the author thinks there is no need in a patient with beginning cataract to wait for maturity.

How far can one go with safety? If the lens does not present when the operator thinks he has made safe pressure he can abandon the intra-capsular operation and cut the capsule with a cystitome or capsule forceps and deliver in the old method with the new technic. He suggested the use of his capsule forceps if any are to be used, because they can be introduced without having the patient look down.

In the intra-capsular operation the lens can be removed as soon as the patient is unable to attend to his duties. The lens can be as easily removed at this time as any other, and he will be in better condition at this time than later.

Some ophthalmic surgeons, Dr. Fisher said, have an impression that Smith does all the intra-capsular operations that are done in India. This is far from correct, but he is the foremost man in India. In the Punjab, where there are 20,000,000 inhabitants, there are about 25,000 cataract operations performed a year, and ninety per cent. of them are intra-capsular operations.

He believes that Smith's technic when used in the capsulotomy operation will do more for the cataract operation than all that has been done for it in the past one hundred years. If that technic is thoroughly mastered in the capsulotomy method a good operator will not have much difficulty in removing the lens in its capsule.

As a word of caution, he urged in closing that ophthalmic surgeons contemplating the removal of a lens in its capsule, master the Smith technic and use it in their old operation and not attempt to remove a lens in its capsule until they have thoroughly mastered the Smith technic and have used it in many capsulotomy operations. If they do not adopt the intracapsular operation they will do better work by using Smith's tecnic in the capsulotomy operation.

DISCUSSION.

Dr. Derrick T. Vail, Cincinnati, Ohio, said he has entirely abandoned the technic of the old operation. He has not used a cystitome since his return from India four years ago. The cystitom is a poor instrument to use, not for what it does, but for what it does not do. He has scarcely any use for a discission needle. He extracts in the capsule whenever it is possible in his hands to do so. He described the operation as it is done by Smith. The incision Smith makes is the best incision for cataract that has ever been devised. The principle involved in brief is that of an angle-hinge to a trap door. The fine point of the knife punctures the cornea at right angles to the limbus. The narrow blade is then turned flat in the plane of the iris and made to pass slowly through the chamber, but on emerging at the opposite side, the edge is turned up again to come out at nearly right angles to the limbus and is then turned flat so that the edge, staying just within the cornea, severs it from the limbus with that one clean forward sweep. The effect of this technic was illustrated by diagram. Those two little angle cuts at the ends of the incision speak volumes for allowing space for lens emergence. Thus it is, that Smith can cause an eye to disgorge a large lens through an apparently small incision with a minimum strain. The corneal incision opens, not like the jaws of a steel trap on its resisting hinge, but more like the jaws of a snake whose articulations yield unresistingly.

As for the lid hook, he always uses it in every cataract operation when delivering the lens and toileting the wound. As for the lens hook, he uses nothing else for delivering the lens. As for the lens spoon, it is a great instrument and works well.

Dr. Fisher's argument favoring operation on immature cataracts, he thought, is unassailable. Personally, he operates on every case, no matter what kind of a cataract it may be, if the vision is at best 20/70 or less. He likes to operate on these cases; he does not dread it at all. If vision is 20/70 or thereabouts, his patient is still in prime health. He can also dilate his pupil and study his fundus. It is a source of immense satisfaction to have seen the optic disc and macular region just before operating.

A faultless, skilled assistant is as essential as a good operator. The speaker's excuse for not delivering every case in the capsule is that he has not such an assistant as Nur Ali.

If Fisher's new lid hook will eliminate the danger of an untrained assistant, then he has conferred a priceless boon on Smith's intracapsular operation, and he prays it may be so.

Dr. William L. Noble described at length the operation as he saw Dr. Fisher perform it. He could not agree with Dr. Fisher that it is unwise to introduce the iris forceps into the eye for fear of injuring the capsule. He could not see why there was any less risk in introducing one blade of the forceps into the eye over the iris, although one does not reach the

pupillary margin of the iris, and the other blade outside of it and grasping the iris. The iridectomy was free. The operation as performed by Dr. Fisher, who had mastered the technic, was comparatively simple, although it involved the highest skill, in that he made no false motions. Every motion counted.

Everything said about the double hook is justified. It increases the simplicity of the work of the assistant. He believes it is a physical impossibility to do the operation as described by Dr. Fisher with any degree of assurance of success with the ordinary speculum. The constant, persistent pressure of separating the lids with speculum is always annoying to patients.

As to the difficulty of placing the spoon behind the lens where vitreous engages in the wound, he fails to see why it should be such a hard thing to do. He could see no difficulty in getting the spoon behind the lens when the vitreous has once appeared. The next time he operates for cataract he will disregard the use of the speculum and employ the lid retractor in its place.

Dr. H. H. Brown said the inflammatory involvements, the accidents from the immediate operation, and the necessity for secondary operations made those who are doing private practice feel as though they are woefully lacking in the results they are obtaining.

As to the operation under discussion, he has seen the late Dr. Green operate after the Smith method three times; he has not had the pleasure of seeing Dr. Vail operate; he has seen Dr. Fisher operate once, and he was holding himself open to conviction. There is not a member who is so blind as to feel that his results have been so satisfactory and so flattering that a better percentage of success cannot be obtained than he is obtaining in his practice. From the detailed accounts of work of men who are doing this operation, he feels a new era is opening in extracting the crystalline lens from the eye ball. He feels, however, that two things are essential to a successful issue of the operation. First, a larger experience than any man can obtain in private practice, therefore necessitating a large hospital and clinical experience to achieve the best results by the technic described. Second, it is necessary to have a corps of assistants more competent than those one is ordinarily accustomed to seeing in hospitals.

As to the use of the speculum, he has abandoned this as obsolete. Some means must be adopted to remove the pressure from the eye ball. He welcomes the Smith operation, and is personally grateful to Dr. Vail and to Dr. Fisher and others who have sacrificed so much to bring this operation and its definite details to the immediate attention of the profession.

Dr. Oliver Tydings stated that the intracapsular operation for the removal of a cataractous lens, as performed by Smith, is the safest yet devised. The advantages gained in other things, such as freedom from postoperative inflammatory troubles, and after cataract, were admitted by all. Is it possible for a good operator to so protect his patient in this operation as to make him safe or more so than by the older methods? To this he would say yes. Dr. Vail had shown step by step how this work is done. He had also pointed out the two sources of danger to the vitreous. First, the pressure of the lids upon the globe before the zonula is ruptured. Second, the faulty use of the spoon when loss of vitreous is threatening. The advantage of Smith's method, when loss of vitreous was threatened, must appeal to all who have tried it.

Fisher has introduced some new features and devised two new instruments which added greatly to the safety and simplicity of the operation. First, the lid retractor which he gave to the profession ten years ago, the careful use of which aids in removing all pressure from the globe during the first part of the operation while the incision is being made. The most recent advance is the double hook. This replaces the single hook of Smith and does away with the necessity of a highly trained assistant. Any man who proposes to do the Smith-Fisher operation should familiarize himself with the technic and thus be able to throw around the patient this additional security while doing the operation with which he is most familiar.

Dr. Richard J. Tivnen stated that in November, 1911, there was a symposium on cataract held by the Chicago Opthalmological Society. Previous to this meeting he sent a circular letter to ophthalmologists in the United States and received 150 replies. Excerpts from the replies were read. In the circular letter this question was asked, "Have you performed the Smith operation of extracting the cataract in the capsule, the so-called intracapsular method? If so, in how many cases?"

Dr. Peter Callan, of New York, in his answer said that Dr. Green had operated on two of his patients with success. In regard to the Smith operation Dr. Callan said: "One should not lose sight of the fact that Smith's patients are peasants, whose wants are few, and mental demands not great. Major Smith is in a class by himself, whose operations far outnumber those of any other surgeon living or dead. What he can do and does with impunity should not be attempted except under very favorable circumstances in the general run of cases such as we have in the United States. I have no doubt a good operator under Smith's instructions would be expert in his method; still I do not consider it as safe as the usual operation with capsulotomy."

Dr. Tivnen stated that his excuse for quoting Dr. Callan was that his reply reflected his own views in the matter and those of others regarding the Smith operation in this country.

Out of one hundred and sixty letters received, one hundred and eleven replied they did not perform the Smith operation, and forty-nine replied they had done it.

A second question was, "Based on your practical experience, do you regard the Smith operation of dealing with the lens capsule superior or inferior to the usual capsulotomy method?"

Of the forty-nine who had performed this operation, eighteen considered the method superior to the capsulotomy method; seventeen considered it inferior, and in fourteen no opinion was expressed. Seventeen of the forty-nine who had performed the operation, and who considered it inferior to the capsulotomy method, each gave one of the following reasons: Danger of loss of vitreous, necessitating keeping an aged patient flat upon the back for a long period; unsafe to the average operator; corneal incision inferior compared with old methods; bandage left undisturbed for ten days is unsurgical and dangerous.

Eighteen of the forty-nine who performed the operation and considered it superior to the usual capsulotomy method, each gave one of the following reasons: Simplicity; less danger of infection; freedom from postoperative irritability; no secondary healing; better vision; ideal for immature cataract; better in selected cases, etc."

Dr. Thomas Faith said ophthalmologists performed simple extraction for a while and did iridectomy, and then went back to the combined operation for some time.

Smith has worked out a method of preparation of the patient which is far superior to anything with which he is familiar. He does not know of any method of cleaning out the conjunctival sac like Smith does it by using a lid hook and injecting bichlorid into the conjunctival sac, being careful afterward to milk out, as it were, the bichlorid solution from the conjunctival sac by pulling the lid toward the external canthus and allowing it to escape.

The technic of extracting the lens is far superior to the old method. By placing the hook on the lower margin of the cornea and keeping up pressure steadily, he has had the lens come out much cleaner than by the old method. Another thing which appeals to him is the Smith incision, which he did not understand until Dr. Fisher explained it.

He does not think applying a bandage over the eye and keeping it on for seven or ten days is unsurgical. One should not attempt to extract the lens and operate on the eye without he is reasonably sure there is no infection present and the wound is clean. It is not considered unsurgical to tie up any other wound for several days, and why should it be unsurgical in the case of the eye?

Dr. George F. Suker said the extraction of cataract is the most delicate operation known to surgery and appealed to him as the heighth of perfection in operative work. The greatest drawback to cataract extraction is the capsule. Whether much or little is left behind it is always a bugbear, more or less. The only way to remove it is to take away the lens in its capsule.

As to the Fisher lid retractor, it is the best of any physical appliance as far as he knows, in that it fixes the lid so that it cannot get away. One can raise the patient's head with it, and yet not have the point go beyond the upper edge of the tarsus. That being so and the lower lid being fixed, if one applies the technic of Smith, as demonstrated by Vail, Green and Fisher, he will have as nearly an ideal operation as if he did the capsulotomy with it.

He mentioned a case on which he recently operated with a good result. By having the lid held by the Fisher retractor the patient is unable to do himself any damage. He is satisfied of that because the patient on whom he operated with the assistance of Dr. Fisher was unruly. Novices should begin to employ the technic with capsulotomy, and after they have done a number of these operations they can try the Smith operation.

The hook in the delivery of the lens is far better than the ordinary method that has been in use. There is less damage done to the eye in delivering it in that way, and with the lid retractor and with the hook better results ought to be achieved. In removing the iris in doing an iridectomy, with one blade of the forceps on the cornea or pupillary area, and the other one on the upper edge of the wound, compressing the cornea, as it were, to squeeze out the iris and grasping the protruding iris, is good technic, but he agrees with Noble that a portion of the iris can be removed without injuring the capsule. Within a week or so in his service he has had two eyes (Dr. Fisher was present) on one of which a beautiful iridectomy was done by Dr. Darling and vision in that eye today is 20/30. If the introduction of the iris forceps will produce trouble with the capsule, the patient would have 20/50 vision.

The Smith technic cannot be improved upon except by having such assistance as mentioned in the advice and suggestions given by Dr. Fisher, and that is by the lid retractor.

At the time of the symposium referred to by Dr. Tivnen, the speaker made the remark, and he believes it yet to be true, that the intracapsular extraction of cataract is suitable for two purposes, one the removal of hypermature cataract, and the other the immature variety.

In a case he saw Dr. Fisher operate upon a little of the vitreous was lost, but Dr. Fisher did not use the spoon. Perhaps he did not think it was necessary to do so. While the amount of pressure in the removal of the lens seems enormous, if one tries it he will find it is not so. The introduction of the spoon in the preservation of the vitreous, giving it support, is as good mechanical appliance as can be had for the retention of the vitreous when it presents, because in delivery of the lens upon the spoon there is no pressure upon the vitreous, and the direction of the force is at right angles to the plane of the spoon, and the lens is parallel to that of the spoon and it has got to come up perpendicularly; therefore, there is no pressure exerted upon the vitreous.

Dr. Fisher, in closing the discussion, thanked the members for the fairness they had shown to the intracapsular operation since he had returned from India. He had not noticed any opposition, and all who had witnessed his operation had expressed themselves as being interested. He sounded a warning.

namely, that any one contemplating the intracapsular operation should master the Smith technic, and especially the lid hook, and spoon delivery in the old operation before attempting the removal of a lens in its capsule. When this is mastered a tremendous step will have been taken forward in the cataract operation, no matter what method is pursued. In Smith's latest paper the visual results are the best that have ever been reported. Results of vitreous escape have been reported by Smith, Vail, Greene and himself. He believes the doctors who gave Dr. Tivnen adverse reports a few years ago would be more favorable to the intracapsular operation when they became more familiar with the Smith technic. He has never heard any unfavorable reports from any one whom he knew was familiar with the technic.

ENGLEWOOD BRANCH.

The April meeting of the Englewood Branch was held Tuesday evening, April 7, 1914, at the Englewood Hospital. The meeting was called to order at nine o'clock by the president, Dr. Julius H. Hess, and the following program presented:

A Symposium on Gastro-Intestinal Diseases.

Newer Methods of Diagnosis and Treatment.

1. Stomach and Duodenum, James Graybeal.
2. Large and Small Intestines, Frederick J. Lesemann.

Both of these papers were well written reviews on the very latest work done on this subject and were very interesting and instructive.

Immediately before the reading of the papers Dr. V. D. Lespinasse showed a case of impotency in which he had implanted a testicle with the result that the man has had an erection. He described his technique. Dr. C. A. Stevens showed a case of epiphyseal separation of the radius, twenty months ago, with non-growth of radius, but continued growth of the ulna.

The discussion was opened by Dr. Solomon Strouse. He brought out many good practical points, stating that with all the new up-to-date methods it is well to remember that the clinical history is still valuable, that the x-ray is expensive, not needed in all cases and taken far too frequently. He spoke of the value of routine procedure in examinations of diseases of stomach and bowels. That in hunting for ameba it must be done right, that is the fresh stool should be examined at the bedside and with warm stage. That they are then frequently found. In closing he called attention to the relation of diseases of the gastro-intestinal tract to metabolic disturbances, reciting several interesting cases.

Dr. James T. Case, in opening his masterful discussion, stated that he liked the way Dr. Strouse had put it, that the x-ray is only an aid to diagnosis and does not constitute a diagnosis; that it may and may not be of help; that it should be looked upon as a consultation and that it has its place only; that doctors are themselves to blame and that the sooner they realize the limitations of the x-ray the better it will be for all.

Dr. Case showed scores and scores of beautiful x-ray plates which were thrown upon a screen so that all could see while he was explaining them.

Those who failed to come missed a rare treat and those who were present carried away with them a good idea of the value of, likewise the limitations of, the x-ray as an aid to the diagnosis in gastro-intestinal diseases.

A vote of thanks was extended Drs. Strouse and Case.

The attendance was 78.

ARTHUR G. BOSLER, Sec'y.

HAMILTON COUNTY.

The annual meeting of the Hamilton County Medical Society was held at the office of Dr. M. C. Dale in McLeansboro at 2 p. m., April 14, with a good attendance and more than the usual interest.

The minutes of the meeting of January 20 were read and approved. The treasurer made his annual report, showing a balance on hand of $23.40. During the past year we have endeavored to develop the fraternal principles of professional courtesy and believe we have progressed in medical ethics, as well as in a broader medical knowledge.

Since our last meeting the oldest member and president of this society, Dr. Charles M. Lyon, who had practiced here continually since the Civil War, has died.

The election of officers for the year 1914 resulted as follows: President, Dr. M. C. Dale; first vice-president, Dr. J. A. Bozarth; second vice-president, Dr. C. O. Lane of Belle Prairie; secretary-treasurer, Dr. I. M. Asbury; censors, Drs. P. M. Nation, J. A. Bozarth, J. J. Ellis; delegate, Dr. I. I. Hall of Broughton; alternate, Dr. P. M. Nation.

A vote decided that the fiscal year of this society shall begin January 1 and end December 31, with

the dates of regular meetings the second Tuesdays of January, April, July and October.

Dr. C. H. Anderson presented the subject of "Variola" in an able address, and Dr. P. M. Nation favored the society with an excellent paper on "Vaccination." These subjects were timely by reason of a recent epidemic in this county. Both authors delved into their subject from away back and brought them up to date. They were complete, comprehensive and practical, and brought out a generous discussion. The society adjourned to Meet July 14.

At 7:30 p. m., after a good dinner (at home) we mixed with an audience of men, women and young people at the First Baptist Church and heard Dr. E. W. Fiegenbaum of Edwardsville deliver his very interesting address on "Innocent Victims of the Social Evil."

I. M. Asbury, Secretary.

JO DAVIESS COUNTY.

The Jo Daviess County Medical Society met in the parlors of the Rays Hotel, Stockton, Ill., at 2 p. m., Jan. 15, 1914, and was called to order by the president, Dr. I. C. Smith, with the following answering to roll call: Stafford; Clark; Snyder; Renwick; Keller; Smith, I. C.; Kreider; Fleege; Smith, D. G.; Nadig; Miller; Logan; with R. J. Stiver of Freeport, C. L. McNutt of Lena and H. C. Whittaker of Warren as visitors. Minutes of previous meeting were read and approved.

The application of F. E. Hagie of Elizabeth was taken up and after balloting he was declared elected to membership.

The president appointed the following committees: Auditing committee, Miller, Keller and Fleege; nominating and apportioning, Stafford, Logan and Snyder.

The nominating committee reported as follows: President, J. C. Renwick; vice-president, F. W. Boots; secretary and treasurer, A. T. Nadig; censor, N. A. Kaa; delegate to State meeting, R. E. Logan; alternate, W. H. Miller.

On motion the secretary was instructed to cast the vote for the society.

Auditing committee reported books correct. A motion was made to give Dr. D. G. Smith a vote of thanks for his long and efficient services as secretary of this society. Motion carried.

Dr. K. F. Snyder then read a paper on "Constipation" which was well received and imparted some valuable points; was discussed by Kreider, Miller and Smith.

Dr. J. S. Clark then gave a very interesting talk on his trip abroad which was both edifying and entertaining. Society adjourned to meet at Elizabeth, April 16, 1914.

A. T. Nadig, Secretary.

KANKAKEE COUNTY.

A regular meeting of the Kankakee County Medical Society was held at the Court House, Kankakee, Thursday evening, April 9, 1914, President Dr. George H. Lee in the chair. Minutes of previous meeting not read. The special feature was a lecture by Prof. Magnuson of Chicago, on "Fractures and the Use of the Ivory Plates and Screws," demonstrated by the stereopticon. The Doctor soon demonstrated that he was very conversant with his subject, presenting it in a very clear and concise manner, much to the pleasure and profit of the goodly number present. After a general discussion the meeting adjourned to May 14, all feeling that they had been repaid for the time and energy expended in attending the meeting. The secretary reports 38 members in good standing for the year 1914.

C. F. Smith, Secretary.

LAKE COUNTY.

The Lake County Medical Society held its regular spring meeting at Highland Park, April 7. The attendance was unusually small, only 13 members. Cold weather and the wet and dry election were the probable causes.

Dr. Abt, the well known paediatrist of Chicago, gave an informal but very interesting talk on "Spasmophilia in Infancy," describing the various phenomena of rachitis, tetany, laryngismus stridulous, etc., and their causes, prognosis and treatment.

A very nice supper was then served by the wives of the local members.

Dr. Fahy was elected delegates to the State meeting and Dr. Taylor, alternate. The next meeting will be at Libertyville some time in June.

W. C. Bouton, Secretary.

MADISON COUNTY.

Our society met at the Country Club, East St. Louis, on April 2, 1914, with the St. Clair County Medical Society by special invitation. Previous to the joint session a short business meeting was held with Dr. E. A. Cook, president, in the chair. The transfer card from the St. Clair County Medical Society, of Dr. H. B. Gillis, of Wood River, was presented and by vote accepted and Dr. Gillis declared a member of this society. Bills to the extent of $8.09 were presented, audited, found correct and ordered paid. A committee of five consisting of Drs. Burroughs, W. H. C. Smith, Ferguson, Tulley and Hastings was appointed by the chair to arrange for the May meeting, with power to act. On motion of Dr. Tulley, duly seconded and carried, the secretary was instructed to draw upon all members who are delinquent in their annual dues at this date. The secretary announced that the June issue of "The Madison County Doctor," would be devoted to the presentation of "Social Problems," and he was instructed on motion of Dr. Pfeiffenberger, unanimously accepted, to print as many copies of that issue as he may need

for his mailing list. Dr. W. H. C. Smith invited the society to hold the June meeting at his School, in Godfrey, the invitation to include the members of the Jersey County Medical Society. The invitation was unanimously accepted with thanks. Secretary Tulley of the Anti-Tuberculosis Society was instructed to procure for himself a membership in the National Organization, at the expense of the County Tuberculosis fund.

E. W. FIEGENBAUM, Secretary.

ROCK ISLAND COUNTY.

The annual meeting of Rock Island County Medical Society was called to order by President Snively at Rock Island Club on the evening of Tuesday, April 14, 1914: Present, twenty-eight members and two visitors. The annual reports of the treasurer and secretary showed a net cash balance on hand of $210.08 and an average attendance through the year of 27.5, this attendance representing about 40 per cent of paid-up membership.

Election of officers resulted in the choice without contest of the following, the secretary's attempt to impede the progress of the steam roller being refused serious consideration: President, J. W. Seids, Moline; first vice-president, J. M. O. Bruner, Port Byron; second vice-president, G. A. Wiggins, Milan; secretary, W. D. Chapman, (re-elected), Silvis; treasurer, A. T. Leipold (re-elected), Moline; delegate, W. D. Snively, Rock Island; alternate, G. L. Eyster, Rock Island.

The retiring president and secretary were each given a vote of thanks for services. The secretary's use of the name of the society in replying to an erroneous newspaper article of a month past was granted the endorsement of the society: the article refuted was one which gained much publicity over the country in the month of March and which made it appear that the American Medical Association now sanctioned all forms of newspaper advertising by its members.

The usual and annual bills were allowed.

The published program was carried out in full: "Photographic Clinic; Some Diseases of the Skin," Dr. A. N. Mueller.

"Injuries to the Brain, with Case Reports," Dr. E. M. Sala.

"Principles of the Treatment of Fractures," Dr. A. D. West.

Meeting adjourned until June.

W. D. CHAPMAN, Secretary.

ST. CLAIR MADISON JOINT MEETING.

On invitation of the St. Clair County Medical Society to the members of the Madison County Medical Society, a joint meeting was held on April 2, 1914, at the Country Club, East St. Louis, which proved to be the largest meeting of medical men ever held in this vicinity under county auspices. The day was an ideal one and about fifty doctors from St. Clair County, and thirty from old Madison, responded to the invitation. Dr. A. Bechtold and Dr. E. A. Cook, presidents of their respective societies, presided over the joint session which was devoted to obstetrics. Dr. Percy H. Swahlen, of St. Louis, gave an address on "Emergencies in Labor," which was fully up-to-date, detailing all the unexpected complications that might arise and the mode of procedure in each. Dr. Hypes is a fluent speaker, and gave the impression that he was completely at home on the subject. Dr. J. Bernard Hastings of Alton, read a paper upon the "Aseptic Management of Normal Labor," which gave in detail the latest information on this practical subject and was received with marked attention and interest. Both papers drew out a full and free discussion, and added much to the general information.

E. W. FIEGENBAUM, Secretary.

WINNEBAGO COUNTY.

The Winnebago County Medical Society assembled at Nelson Hotel, April 14, 1914. Members present, 22; visitors, 3. Dr. Ernest E. Ochsner in the chair. The minutes of previous meeting were not read.

The president introduced Dr. Frank Smithies, until recently a staff member of St. Mary's Hospital, Rochester, Minn., at present on the staff of Augustana Hospital, Chicago, as the speaker of the evening. Dr. Smithies spoke on "Gastric Ulcer-Diagnosis and Treatment." He gave the society a very instructive talk and based his statements on several hundred cases. Many cases were illustrated by lantern slides and proved highly interesting. The society gave Dr. Smithies a rising vote of thanks for his kindness in coming to Rockford and for his very informative lecture.

DR. C. M. RANSEEN, Secretary.

Personals

Dr. Frank Billings has returned from a trip to the Mediterranean.

Dr. G. E. Fuller has removed from Henryetta, Okla., to Elizabethtown.

Dr. C. W. McKee has opened an office at 17 S. Crawford Avenue, Chicago.

Dr. Chas. H. Francis has removed to 77 E. Washington Street, Chicago.

Dr. and Mrs. A. Gaebler, Chicago, have started on a four months' tour to Europe.

Dr. Liston H. Montgomery has been appointed local surgeon of the Pere Marquette.

Dr. J. H. Carpenter has removed his x-ray laboratory to 1906 Ogden Avenue, Chicago.

Dr. Arthur R. Elliott, Chicago, has resumed practice after undergoing an appendectomy.

Dr. George W. Webster announces the removal of his office to 30 North Michigan boulevard, Chicago.

Dr. J. Levitan ot the staff of the Peoria State Hospital has been transferred to the Elgin State Hospital.

Dr. Olive Hughes Kocher of the staff of the Elgin State Hospital has been transferred to the Watertown State Hospital.

Drs. William C. Robert and Harry E. Kerch have been appointed directors of the Kane County Antituberculosis Society.

Dr. Morley D. Bates announces the removal of his office to the corner of Central Park avenue and Monroe street, Chicago.

Dr. B. Barker Beeson, Chicago, has gone to Paris, where he will do special work in dermatology at Hospital St. Louis.

Dr. Rawson J. Pickard has returned to Maywood after nearly five years of work in the government hospitals in the Canal Zone.

Dr. Wm. Parker, former secretary of Brown County Medical Society, has removed from Mt. Sterling to 510 Main Street, Peoria.

Dr. Esther A. Hart Stone of the Watertown State Hospital has been transferred as physician to the State Home for Girls, Geneva.

Dr. John R. Tobin, Elgin, has been appointed chief surgeon of the Aurora, Elgin and Chicago Railway, and Dr. Frederick C. Schurmeier, Elgin, assistant chief surgeon.

Dr. William Cuthbertson was elected president, and Dr. Hugh N. MacKechnie, secretary-treasurer of the Chicago Alumni Association of Toronto University, March 21.

Dr. R. H. Willingham, Elizabethtown, formerly secretary of Hardin County Medical Society, has removed to Neoga, where he succeeded Dr. R. L. Kurtz, who goes to St. Mary's Hospital, Rochester, Minn.

Dr. Drake, the new secretary of the State Board of Health, was presented with a chest of sterling silver by his friends in the Chicago Department of Health April 28, with their best wishes for his success in his new position. In the Public Health Section we reproduce one of the posters designed by Dr. Drake for the *Bulletin* of the Chicago Department of Health.

News Notes

—The new Chicago Surgical Society has changed its name to the Chicago Academy of Surgery.

The sixteenth annual meeting of the American Proctologic Society will be held at Atlantic City, June 22-23 next.

—Sharp and Smith have established a free nurses registration bureau at their new store, 155-157 North Michigan boulevard, Chicago.

—The Chicago Surgical Society entertained a large delegation of European surgeons April 21 who had been attending the Fourth International Surgical Congress in New York City.

—A free medical and dental dispensary is to be opened at the north end of Maple Street, Evanston, about May 1. Special attention is to be given to school children.

—Dr. Henry Schmitz, 7 West Madison street, Chicago, has purchased 50 mgm. of radium for use in his gynecologic service at St. Mary's of Nazareth and Frances Willard Hospitals.

—The 39th meeting of the American Academy of Medicine will be held in Atlantic City June 19-21, 1914. The general subject of the papers and discussions will be "The Practice of Medicine and the Industries."

—Mayor Harrison, on March 27, turned the first shovelful of earth of the ground for the new contagious disease hospital at Marshall boulevard and Thirty-First Street. The hospital when completed will accommodate 600 patients.

—The Woodford County Anti-Tuberculosis League has decided to hold four general meetings during the year, and twelve local meetings. The league is to issue a quarterly bulletin, to be edited by Dr. Homer A. Millard, Minonk.

—The annual banquet of the Cook County Hospital physicians was held in the new Fort Dearborn Hotel, April 2. One hundred and four physicians and guests were present. Dr. Frederick G. Dyas acted as toastmaster.

—The Rush Alumni Association has begun to raise a permanent fund of $30,000, the interest of which is to be used for fellowship and other objects of the association. Forty life memberships have already been paid in.

—The Pitman-Myers Company of Indianapolis has changed its name to the Pitman-Moore Company. Mr. Harry C. Moore has been president of the company several years. The change of name does not mean any change of management.

—The Chicago Medical Society has followed the lead of Baltimore and organized the Chicago Medical Society Glee Club, for which recruits are solicited. Dr. Arthur C. Kleutgen, 903 West Garfield boulevard, is medical director and soloist of the club.

—The Physicians' Club of Chicago has provided an attractive program for its annual ladies' night, May 1. After the dinner a lecture will be given by Miss Helen Keller, and her teacher, Mrs. Macy, on "The Heart and the Hand," or "The Right Use of Our Senses."

—In the case of Dr. Coleman G. Buford against the estate of A. L. Sercomb for $5,000 for an operation performed on Mrs. Sercomb, the probate court returned a verdict of $5,050 in favor of Dr. Buford, that is, the original claim and $50 for consultation and examination of Mr. Sercomb.

—James Deering has made a donation of $1,000,000, to Wesley Hospital, which will hereafter be called Wesley Memorial Hospital. The object of the bequest is to provide treatment for the worthy poor and at the same time increase the clinical facilities of Northwestern University Medical School.

—On March 16 the Department of Health collected samples of milk for sediment testing. For a farmer near Bass, Ind., the test was so unfavorable that notice was sent to him to appear before the Board of Health. Eleven days later a letter was received from the man, saying that he could not come to the city, since he had been ill with small-pox since March 9, and had not yet recovered. During this time, milk had been coming in from the farm daily.

—The Mississippi Valley Conference on Tuberculosis will take place in Memphis, Tenn., May 12, coordinately with the National Conference of Charities and Correction. This conference was called by Mr. James Minnick, secretary of the Illinois State Association for the prevention of tuberculosis and Mr. A. E. Kepford, State Lecturer of the Department of Tuberculosis of the Iowa State Board of Control. The objects of the conference are: First, to define the relations between tuberculosis and other philanthropic work. Second, to extend the propaganda to the rural districts. Third, to plan sanatorium laws best adapted to the states of the Mississippi valley.

—The week of April 19-25 in Chicago was known as "Baby Week," and a combined campaign to raise funds for the Infant Welfare Society was carried on to the end that the Infant Welfare stations may be increased to fifty. Addresses were given by Mrs. George Bass, president of the Chicago Women's Club, Judge Julian W. Mack, Dr. S. Josephine Baker of New York and Miss Julia C. Lathrop of Washington at the Olympic theater, Sunday April 19. The Chicago Advertising Association, through a committee, kept the subject prominently before the people in hundreds of publications and display posters. An electric sign at the corner of State & Madison Streets announced the daily result of the canvass.

—Sharp & Smith will move from their present location at 103 N. Wabash Ave., which they have occupied for the past fifteen years, to 155-157 N. Michigan Blvd., occupying the entire building and two additional floors, giving them approximately 48,000 square feet, enabling them to conform their entire business in their new location, comprising of a salesroom, a hospital display room, two factories, a veterinary department and the weaving of surgical elastic goods, of which they are the largest manufacturers in the United States.

This firm was established in 1844 by J. P. Sharp and H. D. Smith, both now deceased, but continued under the original name of Sharp & Smith by W. W. Sharp as president, son of J. P. Sharp, this firm being incorporated in 1904. The firm has established world-wide reputation as producers of only the highest grade goods and an immense trade was built up on quality, the trade extending all over the world.

Public Health

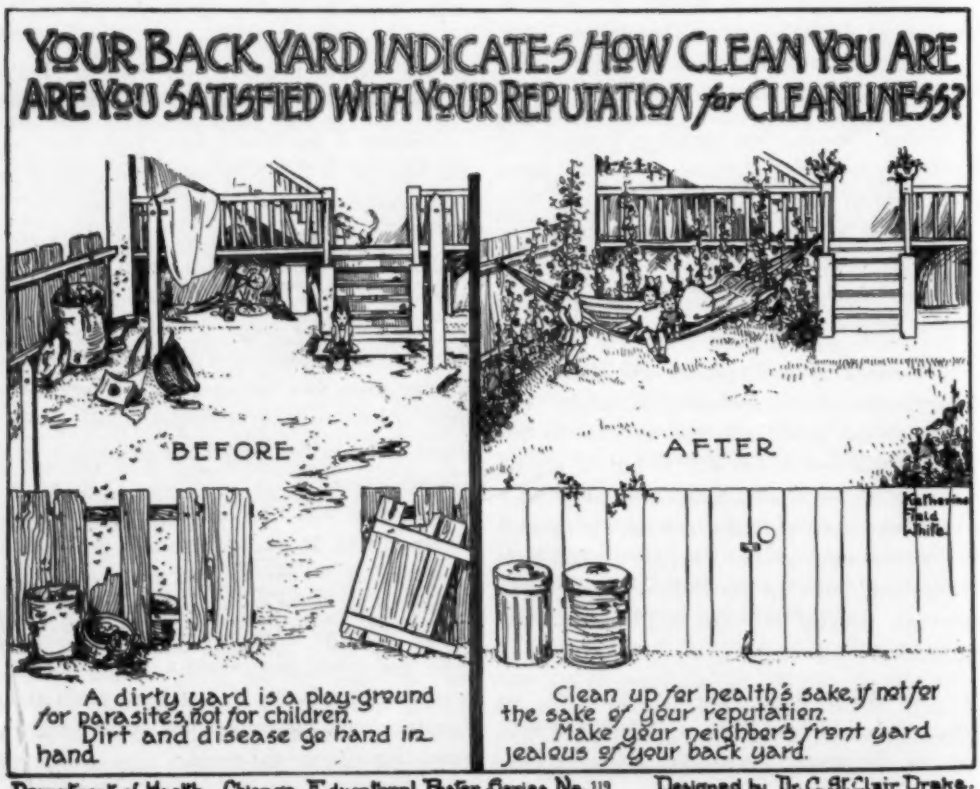
—The *Journal A. M. A.* in a recent issue announces that "The Duket Cure Blows Up." From the comments on this alleged cure published in the JOURNAL last Spring nothing short of a complete collapse of that bubble was to be expected. A report of Duket's backers contained the following paragraph, which give the facts in a nutshell:

"It may at once be stated that the investigators and authors of this report have finally come to the conclusion that there are absolutely no merits in the Duket treatment of tuberculosis; that the method is vastly inferior to any of the approved systems of treating pulmonary tuberculosis, and that their observations would indicate that the Duket treatment may sometimes lead to albuminuria."

—Investigation of the Friedmann tuberculosis remedy by several German experts has established the fact that fresh samples of the remedy are contaminated by bacilli and streptococci, and upon injection into guinea-pigs some of them died of tuberculosis. It would, therefore, seem that the remedy was not free from danger, whatever may be said of its curative effects.

—The *Madison County Doctor* for April contains its usual fine selection of medical news, including some live advice on "swatting" the fly. The fly season—the open season for exterminating them—is now on. A few swats now will save many more later in the summer. But please note that covering the garbage cans and manure boxes tightly, and disposing of the contents so that no flies are attracted to the house will very largely overcome the fly nuisance. All windows and doors of houses and privies should be screened and the vault especially should be made fly-proof. Two ounces of crude carbolic acid added to a gallon of kerosene is an excellent application for garbage and manure. The vault should have a sprinkling of chlorinated lime at frequent intervals.

—We quote from the April *Bulletin* of the Montgomery County Medical Society the following comment anent the case of a member of the society who withdrew from membership when his methods of advertising were criticized:


YOUR BACK YARD INDICATES HOW CLEAN YOU ARE
ARE YOU SATISFIED WITH YOUR REPUTATION for CLEANLINESS?
BEFORE
AFTER
A dirty yard is a play-ground for parasites, not for children. Dirt and disease go hand in hand.
Clean up for health's sake if not for the sake of your reputation. Make your neighbor's front yard jealous of your back yard.
Department of Health - Chicago - Educational Poster Series No. 119
Designed by Dr. C. St. Clair Drake.

"Suffice it to say that the medical profession is opposed to advertising—why? Because truthful statements have no advertising value and will not attract business, therefore the practice soon evolves itself into fraud and the advertiser makes extravagant claims of methods not possessed by the medical fraternity at large. His prey are principally the incurably sick, grasping at straws, and the sucker whose ailment is largely psychic, both of whom are exploited to the limit.

"Medical advertising is a dirty game at best, loathed by the better element of the profession. If you win in medicine, you must 'get right' with yourself, the public and your profession."

Marriage

SAMUEL DUFF ANDERSON, M. D., Elvaston, Ill., to Mrs. Lena Everhart of Littleton, Ill., at Quincy, Ill., recently.

OLIVE FRANCES HUGHES, M. D., and Mr. Emil Kocher, both of Elgin, Ill., February 26.

ALFRED E. RIVES, M. D., to Miss Helen Lawrence, both of East St. Louis, Ill., at Louisville, Ky., March 2.

FRANK MONROE WELDY, M. D., to Miss Rose Aurelia Seifried, both of Chicago, April 4.

Deaths

LEILA GERTRUDE BEDELL, M. D. Boston University, 1878; for many years a practitioner of Chicago and for ten years a resident of Tryon, N. C.; from 1885 to 1888, president of the Chicago Women's Club; died at her home in Tryon, N. C., March 28, aged 76.

MOREAU ROBERTS BROWN, M. D. University of Louisville, Ky., 1876; of Chicago; emeritus professor of laryngology and rhinology in the Chicago Policlinic; formerly professor of laryngology, rhinology and otology in the College of Physicians and Surgeons, Chicago; a member of the Illinois State Medical Society; a Fellow of the American Larynogological Association; Medical Director of the National Union; a prominent specialist on diseases of the throat, nose and ear; died at his home in Winnetka, Ill., March 20, aged 60.

JOHN HERBERT CORY, M. D. Eclectic Medical College of the City of New York, 1878; for many years a member of the Board of Education and Health Officer of Geneva, Ill., died at his home in that city, about March 25, aged 62.

ELISHA C. DUNN, M. D. American Eclectic Medical College, 1888; at one time secretary of legation at Constantinople; and once alderman of Rockford, Ill.; died at his home in that city, March 23, aged 74.

HENRY S. HINMAN, M. D. College of Physicians and Surgeons, Keokuk, Iowa, 1878; a practitioner of Jasper County, Ill., for thirty-six years; formerly president and secretary of the Jasper County Medical Society, and police magistrate of the city of Newton; died at his home March 19, from valvular heart disease, aged 66.

CHARLES T. HUNTER, M. D. University of Tennessee, Nashville, 1878; died at his home in Springerton, Ill., March 18, from heart disease, aged 74.

OLIN MCCORMICK, M. D. College of Physicians and Surgeons, Chicago, 1900; of Herscher, Ill.; died in the Presbyterian Hospital, Chicago, March 20, aged 45.

WILLIAM R. NASH, M. D. Indiana Medical College, Indianapolis, 1877; formerly of Brownsburg, Ind.; died recently at his home in Fairmount, Ill., aged 72.

ORANGE H. RUSSELL, M. D. College of Physicians and Surgeons, Keokuk, Ia., 1866; for half a century a practitioner of medicine; died at his home in Lomax, Ill., from senile debility, March 31, aged 74.

ERNEST J. SCHENCK (license, years of practice, Illinois 1883); a practitioner of Princeton, Ill., since 1858; died at his home March 15, from heart disease, aged 83.

CHARLES ALLEN SMITH, M. D. Barnes Medical College, St. Louis, 1897; formerly a practitioner of East St. Louis and De Land, Ill.; died in the West Side Hospital, Chicago, March 8, from cirrhosis of the liver, aged 78.

EUGENE G. WEST, M. D. Hahnemann Medical College, Chicago, 1884; formerly of Effingham, Ill.; died at his home in Orange, N. J., March 29, from scarlet fever, aged 49.

WILLIAM C. WILLEFORD, M. D. Medical College of Indiana, Indianapolis, 1881; of Marion, Ill.; formerly president of the Davies County

(Ind.) Medical Society; local surgeon for the Chicago and Eastern Illinois Railway; died at the home of his son in Indianapolis, January 2, from cerebral hemorrhage, aged 64.

CELIA M. HAYNES, M. D. Cleveland University of Medicine and Surgery, 1877; an army nurse during the Civil war; one of the first women to practice medicine in Chicago; died in St. Luke's Hospital, April 9, aged 69.

WILLIAM THOMAS KIRBY, M. D. Northwestern University Medical School, Chicago, 1897; a Fellow of the American Medical Association; and a private banker of Chicago; died in Wesley Memorial Hospital in that city, April 16, from tumor of the brain, aged 42.

HERMAN MILBACHER, M. D. University of Munich, Bavaria, 1881; a member of the Illinois State Medical Society; and a well-known practitioner of Aurora; died in Long Beach, Fla., April 11, aged 63.

HENRY C. SAWYER, M. D. College of Physicians and Surgeons, Keokuk, Iowa, 1878; died at his home in Cornell, February 24, aged 68.

NEW AND NONOFFICIAL REMEDIES.

Since the publication of New and Nonofficial Remedies, 1914, the following articles have been accepted for inclusion with "N. N. R."

H. M. Alexander & Co.: Typhoid Vaccine, Immunizing.

B. B. Culture Laboratory: B. B. Culture.

Farbwerke Hochst Co.: Amphotropin.

Fairchild Bros. & Foster: Trypsin.

Hoffman-Laroche Chemical Works: Thiocol, Syrup Thiocol, Roche.

Hynson, Westcott & Co.: Phenolsulphonephthalein, H. W. & Co.: Phenolsulphonephthalein Ampoules, H. W. & Co.

Merck & Co.: Ceroin.

H. K. Mulford Co.: Anti-Anthrax Serum, Mulford; Antistreptococcus Serum scarlatina, Mulford; Disinfectant Krelos, Mulford; Salicylos; Staphylo-Serobacterin; Strepto-Serobacterin, Typho-Serobacterin.

E. R. Squibb & Sons: Tetanus Antitoxin, Squibb.

Thiocol and Syrup Thiocol, Roche, readmitted to N. N. R. The advertisements of Thiocol and Syrup Thiocol, Roche, to the public in the form of Sirolin having been abandoned here and abroad, the Council has readmitted Thiocol and Syrup Thiocol, Roche, to New and Nonofficial Remedies (see above).

Trypsin, Fairchild.—A powder consisting of the proteolytic enzyme of the pancreas, separated to a considerable extent from the other enzymes and constituents of the gland and of a definite strength. Trypsin digests proteins and nucleoproteins in slightly alkaline media. Fairchild Bros. & Foster, New York. (*Jour. A. M. A.*, Mar. 7, 1914, p. 776.)

Cerolin.—Cerolin consists of the fats, cholesterins, lecithin and ethereal oil extracted from yeast by alcohol. Experiments have indicated that the laxative action of yeast depends on the fats and lipoid constituents and that in skin affections these substances have the action of yeast itself. Hence cerolin, marketed in the form of cerolin pills, 1½ grains, is said to be useful in furunculosis, acne and in other skin affections. It is also said to be useful in habitual constipation, leukorrhea, erosions of the vagina and cervix and in similar diseases. Merck & Co., New York City. (*Jour. A. M. A.*, March 21, 1914, p. 931.)

Refined and Concentrated Tetanus Antitoxin, Squibb.—For description see New and Nonofficial Remedies, 1914. Marketed in the form of syringes containing respectively an immunizing dose and a curative dose. E. R. Squibb & Sons, New York. (*Jour. A. M. A.*, March 21, 1914, p. 931.)

Typhoid Vaccine (Immunizing).—For description of typhoid vaccine see N. N. R., 1914, p. 259. It is prepared according to the method of the U. S. Army Laboratory. Marketed in ampoule and syringe packages, each containing 500 million, 1,000 million and 10,000 million killed typhoid bacilli. H. M. Alexander & Co., Marietta, Pa. (*Jour. A. M. A.*, March 28, 1914, p. 1014.)

B. B. Culture.—A pure culture of *Bacillus Bulgaricus* marketed in bottles containing 90 Cc. Intended for use in intestinal indigestion and for the enterocolitis of infants. B. B. Culture Laboratories, Yonkers, N. Y. (*Jour. A. M. A.*, March 28, 1914, p. 1014.)

Book Notices

THE PRACTICE OF PEDIATRICS. By Charles Gilmore Kerley, M. D., Professor of Diseases of Children, New York Polyclinic Medical School and Hospital. Octavo of 878 pages, 139 illustrations. Philadelphia and London: W. B. Saunders Company, 1914. Cloth, $6.00 net; half morocco, $7.50 net.

W. B. Saunders Company have just issued "The Practice of Pediatrics," by Charles Gilmore Kerley, M. D.

This is one of the highest grade text-books we have seen that has come out recently.

As is usual in a text-book on pediatrics, much attention is given to feeding. Malnutrition in its various forms is discussed together with the many resulting conditions.

All the acute infections to which childhood is liable are taken up for study. These various headings are

taken up systematically, with ample attention given to prophylaxis, prognosis, diagnosis, and treatment.

Gymnastic therapeutics is given a chapter. So many physical defects may be relieved by this means, that this chapter is a real addition to the book.

A chapter on heredity and environment is of interest. A chapter on general therapeutic measures takes into consideration many agents, including climate, eating, bathing, exercises, alcohol, heat, cold, lavage, etc.

Vaccine therapy is given attention.

In all this is one of the very satisfactory monographs of pediatrics.

DEVELOPMENT AND ANATOMY OF THE NASAL ACCESSORY SINUSES IN MAN. Based on 290 lateral nasal walls, showing the various stages and types of development from the sixtieth day of fetal life to advanced maturity. By Warren B. Davis, M. D., Corinna Borden Keen Research Fellow, Jefferson Medical College, Philadelphia. Octavo of 172 pages with 57 original illustrations. Philadelphia and London: W. B. Saunders Company, 1914. Cloth, $3.50 net.

Quite unlike any other volume on anatomy is this volume from Dr. Warren B. Davis. The book deals extensively with embryologic anatomy of the nasal accessory sinuses, continuing with the study of the same anatomical parts of the child, the youth, and the adult.

The drawings, 57 of them, are remarkably good. The entire work shows great care in its production.

The book should be in the hands of every rhinologist.

STATE BOARD QUESTIONS AND ANSWERS. By R. Max Goepp, M. D., Professor of Clinical Medicine at the Philadelphia Polyclinic. Third edition, thoroughly revised. Octavo volume of 717 pages. Philadelphia and London: W. B. Saunders, 1914. Cloth, $4.00 net; half morocco, $5.50 net.

The name implies this is a volume of questions asked at various State Board Examinations and the answers thereto. It is a very large quiz compend, covering all the subjects likely to be given in any medical examination. A call for a third edition indicates its value to those contemplating an examination.

MEDICAL GYNECOLOGY. By S. Wyllis Bandler, M. D., Adjunct Professor of Diseases of Women, New York Post-Graduate Medical School and Hospital. Third thoroughly revised edition. Octavo of 790 pages, with 150 original illustrations. Philadelphia and London: W. B. Saunders Company, 1914. Cloth, $5.00 net; half morocco, $6.50 net.

If medical gynecology were more studied and less operative gynecology were practiced, there would be fewer neurasthenics.

This work is devoted entirely to medical gynecology. In it are discussed the perplexing conditions the practitioner so frequently finds.

The author apparently does not believe that the slight malpositions of the pelvic organs frequently found, are the cause of all the symptoms that women fall heir to. The medical side of all the subjects are discussed—diagnosis, prognosis, and treatment are all well represented, and we recommend this work to the profession.

THE PATHOGENESIS OF SALVARSAN FATALITIES. By Dr. Williams Wechselmann, Directing Physician of the Dermatological Department, Rudolph Virchow Hospital in Berlin. Authorized translation by Clarence Martin, M. D., First Lieut. M. R. C., U. S. Army; member Association Military Surgeons, St. Louis, Mo. The Fleming-Smith Company, Medical Publishers, Saint Louis, U. S. A. Price $1.50.

This little volume, by such an eminent authority, coming at this time, when salvarsan is really only proving its place, yet being so universally used, will be of especial interest.

The book consists mostly of a citation of cases, method of diagnosis, treatment, symptoms and findings, and autopsy, together with the author's views on the cause of the fatalities.

Any physician who is using salvarsan in his practice, should read this little volume.

THE PRINCIPLES OF PATHOLOGIC HISTOLOGY. By Frank B. Mallory, M. D., Associate Professor of Pathology, Harvard Medical School and Pathologist to Boston City Hospital. Octavo of 677 pages, with 497 figures containing 683 illustrations, 124 in colors. Philadelphia and London: W. B. Saunders Company, 1914. Cloth, $5.50 net.

This new work from the presses of the Saunders Company comes with a pleasing appearance.

The book shows a vast amount of work and care in its production. It is quite complete in the number of subjects treated.

The author has a method particularly his own, for the teaching of his subject, which will prove of interest to his students.

In discussing the final result, he studies many of the acute diseases, which may produce the same conditions.

The large number of drawings and microphotographs are again representative, not only of the amount of work, but also the care with which it has been done. One hundred and twenty-four color illustrations add much to the value of the book.

We think the student of pathology will like this work, and we recommend it to the profession.

TREATMENT OF CHRONIC LEG ULCERS, A PRACTICAL GUIDE TO ITS SYMPTOMATOLOGY, DIAGNOSIS AND TREATMENT. By Dr. Edward Adams. 122 Pages. Cloth $1.00. Published by The International Journal of Surgery Company, 100 William Street, New York City.

One of the most serviceable little booklets for the practitioner we have seen. It deals exclusively, in a practical way, with those chronic ulcers which are very annoying, and which many times the physician fails to cure, probably because he does not know just how to treat them to get the best results. This little volume tells how to best treat them with the least possible inconvenience to the patient, and at the same time get results.

CHEMICAL PATHOLOGY. Being a Discussion of General Pathology from the Standpoint of the Chemical Processes Involved. By H. Gideon Wells, Ph.D., M.D., Professor of Pathology in the University of Chicago and in Rush Medical College, Chicago. Second edition, thoroughly revised. Octavo of 616 pages. Philadelphia and London: W. B. Saunders Company, 1914. Cloth, $3.25 net.

The revision of this work was necessary because of our ever-changing studies in biologic chemistry. Primarily it is the work of a scientist, and is more especially of interest to the laboratory worker, the teacher of pathology, and the student of pathology.

The work is not destined to replace either textbooks on chemistry or those on pathology, but will be studied in conjunction with those works.

The first chapter of the book is written more especially for the student of a decade ago, and puts him in touch with the theories of today—so far as biologic chemistry is concerned.

The medical practice of tomorrow will be based very largely on the studies that have called forth this book.

The mechanical make-up of the book is also good.

THE JUNIOR NURSE. By Charlotte A. Brown, R. N., Instructor in the Boston City Hospital; Graduate of the Boston City Hospital and Boston Lying-in Hospital Training Schools for Nurses; late Superintendent of the Hartford Hospital Training School, Hartford, Conn. 12mo, 208 pages, illustrated. Cloth, $1.50, net. Lea & Febiger, Publishers, Philadelphia and New York, 1914.

This little volume, as its name implies, is intended for the nurse who is beginning her training. It seems to be an excellent little work for the purpose it is intended. The woman who has had no training, and who is doing "practical" nursing, will find this book of great value to her.

TEN SEX TALKS TO GIRLS (14 years and older). By Irving David Steinhardt, M. D. Author of "Ten Sex Talks to Boys" (14 years and older). Instructor in Clinical Surgery and Assistant Surgeon, Cornell University Medical School; Assistant Pediatrist, Mount Sinai Hospital, O.P.D., New York City; Orthopedic Surgeon, New York Hospital, O.P.D., and Bronx Hospital and Dispensary; First Lieutenant, Medical Reserve Corps, U.S.A.; Member of American Medical Association; The American Society of Moral and Sanitary Prophylaxis; and the American Academy of Political and Social Science. With six illustrations. Philadelphia and London: J. B. Lippincott Company. Price $1.00.

BOOKS RECEIVED.

TEACHING SEX HYGIENE IN THE PUBLIC SCHOOLS, by E. B. Lowry, M. D. Author of "Herself," "Himself," etc. Chicago. Forbes & Company, 1914. Price 50 cents.

UNITED STATES BREWERS' ASSOCIATION. The Year Book with Proceedings of the Fifty-Third Annual Convention Held in Atlantic City, N. J., Friday and Saturday, October 3d and 4th, 1913. The United States Brewers' Association, Publishers, New York, 1914.

TREASURY DEPARTMENT, United States Public Health Service. Public Health Bulletin No. 62. July, 1913. Communicable Diseases: An Analysis of the Laws and Regulations for the Control Thereof in Force in the United States. By J. W. Kerr, Asistant Surgeon General, and A. A. Moll, A. B. Prepared by Direction of the Surgeon General. Washington Government Printing Office. 1914.

THIRTY-SIXTH ANNUAL REPORT OF THE BOARD OF HEALTH OF THE STATE OF NEW JERSEY, 1912, and Report of the Bureau of Vital Statistics. Union Hill, N. J. Dispatch Printing Company. 1913.

ROCHESTER AND THE MAYO CLINIC. A Fair and Unbiased Story Calculated to Aid Physicians to Greater Cures and Larger Incomes. By George Wiley Brooms, M. D. The Shakespeare Press, 114-115 E. 28th St., New York. 1914. Price, $1.10.

RESULTS OF EXAMINATION HELD BY THE ILLINOIS STATE BOARD OF HEALTH.

CHICAGO, JANUARY 14-16, 1914.

Physicians: Present, 96; passed, 77; failed, 19.

PASSED.

College	Year Graduated	Total No. Examined
Barnes	1895, 1906(1), 1910 (1)	3
Bennett	1911(1), 1912(1), 1912(1), 1913(1), 1913(10), 1914	16
Chicago Coll. M. & S.	1911, 1911(1), 1913(4), 1913(2), 1913(4)	12
Drake University	1909(1), 1912	2
Hahnemann, Chi.	1912(1), 1913(1), 1913	5
Harvard, Boston	1911(1), 1912	2
Hering	1913(1)	1
Illinois Medical, Chi.	1910(1)	1
Jefferson	1908	1
Jenner	1913(1)	1
Johns Hopkins	1907(1), 1910(1), 1913	3
Marquette Univ.	1913	2
Meharry	1904(1), 1910(1), 1913(2)	4
National, Chi.	1903(1), 1904	2
Northwestern	1907(1), 1913	2
Royal Univ. of Budapest	1898	1
Royal Univ. of Vienna	1895	1
Rush	1912(1), 1913(4), 1914	8
Univ. of Geneva	1911	1
Univ. of Illinois	1912(1), 1913(2), 1913	5
Univ. of Naples	1906(1)	1
Univ. of Nebraska	1913	1
Univ. of Penn.	1897	1
Washington Univ.	1913	1

FAILED.

American, St. L.	1912	1
Central P. & S., Indpls.	1897	1
Chi. Coll. M. & S.	1909(1), 1910(1), 1911(1), 1911(1), 1912(1), 1913(2), 1913(1)	8
Detroit Coll. of Med.	1910	1
Hahnemann, Chi.	1910(1), 1912(1)	2
Hering, Chi.	1913(1)	1
Jenner	1913(1)	1
National, Chi.	1903(1), 1909(1)	2
P. & S., St. Louis	1907(1)	1
Univ. of Illinois	1912(1)	1